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The *"Medical Clinics of North America"* continue to break all previous records. The March number *sold out of print within ten days* after publication, notwithstanding the fact that the number of copies printed was far and away the largest printing ever made of these books on clinical medicine.

We are substantially *increasing* the print for the May number—*just off press!* This excellent number comes from the *Cleveland Clinic.* It contains a 7-clinic Symposium on the Medical Aspects of Thyroid Disease, covering prevention, treatment, complications, atypical cases, malignancy, radiation therapy, preoperative and postoperative care and management. These are not superficial clinics, mind you, but each one goes thoroughly into details of diagnosis, symptom interpretation, and treatment. Behind each method, each treatment is the vast clinical experience of the Cleveland Clinic, famous the world over for its clinical work in this field. The methods and treatments given here have been tried over and over again. *They have been proved!*

But this is only one feature of the May Number of the "Medical Clinics." In addition there are *20 other clinics* on live subjects of every-day general practice—Diet in Arthritis, Treatment of Emaciation, Treatment of Essential Hypertension, Management of Heart Crises, Hay Fever, Food Allergy, Burns, and many, many others.

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MODERN TRENDS IN SURGERY

J. TATE MASON, M.D.

SEATTLE

The man who attempts to point out the trends in any particular human activity must to a certain extent assume the rôle of a prophet—and that is a delicate thing to do; for events are bound to take place relentlessly and with little regard for the words of the prophet. If he has been lucky in his forecasts he usually receives but little credit, but if he has been wrong he is not allowed to forget.

There are two methods which the prophet may use. The first, and the more reliable, is to foretell the future by extending the knowledge of the past. In this method, however, there are two possible weaknesses. Our prophet may have only a dim or distorted view of ancient knowledge and facts on which to base his forecasts; again, recent events which are to prove of great importance may be so close to him that he cannot see them and hence has not yet been able to acquire a proper perspective. Unless he has such a perspective and a good knowledge of the well blazed trails of today, he will not be successful in projecting his speculation into the future.

The second method is by pure speculation, dreaming and divination. All prophets should be dreamers; in science and the progress of science, however, dreams must become hypotheses, these must be succeeded by theories, and the theories finally proved or refuted. The man who would dream dreams of the future in medicine and surgery can hope for nothing but the severest tests of his prognostications. Hence I will only mention this second method of prophecy and adopt the far safer effort of presenting the subject of modern trends in surgery by relying as far as possible on the facts that are known and the comparatively recent changes and experiences that can be observed.

ECONOMIC AND SOCIAL TRENDS

Profound changes are taking place at present in our social, economic and political condition. Without doubt these changes must affect the medical profession as a whole. Many citizens seem to desire such a change in our status. I recognize this ferment but I regret it exceedingly. The problem for the physician is twofold: Not only must he consider his own personal professional status but it is also his responsibility to consider the welfare of the general mass of citizens. The average person has little conception of the latter problem, having been much influenced by all sorts of propagandists without any idea of the dangers that would ensue from the adoption of various ill considered schemes.

The leaders of medical thought must give time and attention to these problems; they cannot be ignored. We should never refuse to consult with lay groups and should seek opportunities for such discussion whenever possible. Only by such consultation and advice can our profession act as a stabilizer at a time when so many unsound plans for changing the economic relations of patient and physician are being presented.

During the past few years, diminished income and economic distress have not been limited to manual workers or to salaried brain workers. The professions also have felt the pinch. After ignorance and greed, this stress of economic necessity saps the roots of medical ethics. Competition is keenest and most ruthless near the foot of the economic ladder. The evil of secret fee splitting has never been fully abated. Economic necessity tends to increase this pernicious practice. It is time to warn again and to point out again that secret fee splitting is still as dishonest, as antisocial, as subversive of morals and as great an abuse of the fine confidential relations existing between physician and patient as it ever was. The patient and his illnesses and his operations are not a commodity for sale and barter between physicians.

As in other affairs of life, the first responsibility rests with the individual physician. The next is with his county society, which has within its power the first disciplinary measures. The function of the central organization must be largely educational and its influence first of all moral.

ELEVATION OF STANDARDS IN SURGERY

Pressing for solution as never before is the question as to who should be permitted to practice major surgery. The right to undertake a major surgical procedure should not be bestowed lightly. To be a surgeon is at once a great privilege and a great responsibility. The day of the self-made surgeon is or should be past. With rare exceptions only those able to show unusual qualifications and special and adequate training should be admitted to the group that might be called "master surgeons."

The teaching of medical schools and hospitals has raised the quality of our craft immensely. Even so, many poorly qualified men aspire to be surgeons, and there is as yet no way to prevent their assumption of quality long before they are justified. Their legal right under our various state laws is unquestioned. Obviously, the further responsibility of improving the grade of surgeons and protecting the public is in the hands of the surgeons themselves. An impressive lesson as to what may be done can be found in the improvement

Address prepared by the President-Elect of the American Medical Association for presentation before the opening general meeting at the Eighty-Seventh Annual Session, Kansas City, Mo., May 12, 1936.

of medical schools and the raising of the standards of general medical education which followed the work of the Council on Medical Education beginning in 1905.

The desirability of special training in surgery and the great necessity for it have been so obvious to instructors and students alike that great progress has been made already in the line of postgraduate teaching in hospital positions, fellowships and assistantships. The establishment of an examining body like the American Board of Surgery at present contemplated would, while giving recognition to those fully qualified, act at the same time as a deterrent to those not qualified.

I do not want it understood that I favor withholding adequate instruction in surgery in the colleges from those who do not aim to become master surgeons. Many such men in the past have given yeoman service in the field of minor and emergency surgery and can be depended on in the future. Isolated communities and even the smaller cities are usually dependent on such men for the relief of surgical conditions arising in their practice. On the judgment of these men and their recognition of their own limitations much depends. I speak in praise and in behalf of these faithful servants of the people. I believe that most of the criticism already voiced applies not to them but rather to the overambitious man of the large and middle sized cities.

THE PAST AND THE PRESENT

The history of the medical past has been presented so frequently that I offer no apology for referring to it briefly. Little of importance was performed in surgery prior to the beginning of the nineteenth century. True, the treatment of wounds was practiced in crude fashion. The aphorisms of Hippocrates and the anatomic studies of Galen and later of Vesalius mark the really important achievements of early centuries.

Leaving out of consideration the advancement of medical science in general, the clinical observation of disease, the improvements in physical diagnosis and some knowledge of pathology, surgery continued a sterile field of endeavor. Not until the nineteenth century did the landmarks of importance from a surgeon's point of view become progressively more frequent. The abdomen was invaded by daring operators, mostly for ovarian tumors, and in spite of the staggering mortality rate an increasing number of successful cases were reported.

The advent of general anesthesia in 1846 for the first time made possible the performance of operations of election. Even with this boon the dreaded sepsis stood like a black angel guarding the sacred precincts of the human body until the practical application of Lister's theories, based on Pasteur's discoveries, in 1866. The establishment of bacteriology as a sound and accepted science allowed a gradual but logical transition from the antiseptic to the aseptic era. Opportunity was now afforded the surgeon to observe pathologic conditions in the living body, and stages of disease processes could be noted for the first time. New areas of the body were explored by the surgeon's knife, and diseases never before considered surgical were treated successfully. Thus anesthesia, asepsis and bacteriology paved the approach to modern surgery.

In the last fifty years, and especially since 1900, great strides have been made in the practice of the surgical art. By experimenting with new theories and by the trial and survival of some of these, the surgeon has been able to utilize discoveries in the other sciences and to make them an integral working part of the practice of his art.

The use of x-rays has added much not only to the diagnosis but also to the successful treatment of certain lesions. Somewhat more recently, radium has come to play an important part in treatment, especially of neoplastic conditions. The employment of electricity in the form of radiofrequency currents has made successful certain procedures previously impossible. By its use in the prevention of hemorrhage and the checking of the spread of malignant tumors, many lives have been saved.

Numerous instruments for diagnostic precision have been introduced during this latter period of surgical progress, including the cystoscope, bronchoscope, esophagoscope, proctoscope and lastly the gastroscope.

From the practice of his art came greater improvement in technical skill to the surgeon. Better lighting, better instruments, better organization of hospitals and their facilities, greater utilization of team work between the surgeon and allied specialties in diagnosis and treatment—all have contributed to the remarkable advances this branch of medicine has made in the past few decades. Improved hospital facilities, better nursing care and more pertinent methods of preoperative and postoperative care all have had their part in advancing surgery to its present status.

While all this improvement in technical skill was taking place, while the knowledge of the pathology of living tissues was being extended, while more and more refined and reliable mechanical aids were multiplying, a steady increase in the sciences of physiology and chemistry has supplied the surgeon of recent years with a new outlook on therapy. Surgery for fifty years had concerned itself chiefly with the correction of the mechanical defects of the body. Diseased organs had been removed, an obstructed bowel had been corrected, tumors had been destroyed—procedures made possible by the practical application of knowledge concerning the anatomy, chemistry and physiologic activity of the human body. But the surgeon of today is no longer content with these procedures. His desire is to restore if possible the whole organism to its physiologic harmony—reconstructive surgery. Vain hope, you may say, but still a goal devoutly to be sought!

One of the earliest efforts to influence physiologic balance by operations on the endocrine glands was the operation of hysterectomy and ovariotomy for hysteria and dementia—an effort soon found to be misdirected. Many of the ductless glands are now treated surgically with brilliant success. The results of thyroid surgery are too well known to need emphasis. Surgical treatment of dysfunctions of the adrenals, parathyroids and pancreas is being practiced rather widely, and many spectacular results are reported in the literature.

So, too, a better knowledge of the anatomy and the function of different parts of the nervous system has in recent years aided much in the diagnosis of abnormal conditions of that system and has permitted great advances in their surgical treatment. Surgical procedures for the relief of intractable pain have added immeasurably to the comfort of countless sufferers. Operations on the sympathetic nervous system, by increasing blood supply to certain parts, have saved many a person the loss of a useful bodily extremity. More recently, certain patients with hypertension have been assured much longer life and greater happiness by operations on the splanchnic nerves.

Thus the discovery of the three basic factors of anesthesia, asepsis and bacteriology, furthered by the development and application of anatomy, pathology,

chemistry and physiology, promoted rapid progress in surgery. We have been permitted to perform surgical procedures undreamed of before their discovery. We now successfully explore and treat surgical conditions of practically every portion of the body. The abdomen and even the chest and the intracranial cavity may be entered with impunity by competent surgeons. These procedures would have been declared impossible less than a hundred years ago. With our increasing knowledge and our improvement in technic, we are now in a transition era that is a transition from surgery as a mechanical correction of disorders of the body to surgery aimed at a restoration of normal bodily function. The surgeon of today is concerned not only with the eradication of the morbid process but also with the restoration of the body to the physiologic normal.

THE FUTURE

If I may now be permitted to project these past and present tendencies into the future, some foresight may be gained as to whither we are tending, in surgery specifically and perhaps in medicine generally. In this respect I have little sympathy for those who assert that no further improvement is to be expected in surgical technic. No less an authority than Billroth is credited with having made such a statement long ago. From time to time others equally respected have made similar remarks. We have seen how history has rapidly and consistently refuted their pessimistic prophecies. Progress in this element has continued with increasing rapidity. Technical skill will continue to be improved.

There is no limit to mechanical ingenuity in the production of new apparatus. New instruments will not only improve the technical skill but as diagnostic aids will enable the surgeon to determine and correct disorders of function possibly even before morbid processes develop. It is truly hoped that the latter state will be reached. Therein surgery will become a preventive measure, so to speak, as well as a curative agent. The trend of medicine generally is toward prevention. Surgery is and will continue keeping pace in this direction.

The far more numerous and better equipped investigators in all lines of scientific endeavor speak for more rapid progress in the near future than those of us who have observed the remarkable strides in the past quarter of a century can possibly conceive at this time. Anesthetics and the methods of their application are constantly being improved. It is not too much to expect that an ideal in this respect will soon be conceived and developed for us.

Greater team work between all the specialties in the medical art is confidently expected. Cooperation between the physiologist and the surgeon has already meant much to surgical progress, as we have seen. This is true of the consultation between all the groups. More such cooperation cannot fail to further medical and surgical progress.

There is at present an increasing number of skilful, well trained surgeons throughout the country. Where yesterday one or only a few were capable of some particular operation, there are now dozens competent to undertake it. This wide diffusion of good surgeons is a most significant trend. No longer is it necessary for a patient to travel a long distance for special care. Each section of the country will have a selection of men competent in every special field of surgical endeavor. Naturally this will reflect to the betterment of medical care throughout the land.

Finally, may I plead that I am old enough and old fashioned enough in my point of view to speak a confident word for affability, kindliness and a friendly personality on the part of the surgeon.

In the tremendous strides scientific medicine has made there has been overlooked one of our original and important aspects. That is the personal equation and the relation between doctor and patient. In the old days the instruction of a young medical student and doctor by a preceptor aided much in the development and furthering of this factor. The ripe years of experience of this older doctor gave much to the young man in the way of kindness and consideration and ability to be always ready to encourage the ill.

I fear that some of us became old in the practice of medicine before it was realized that the man of yesterday, with a limited amount of scientific knowledge, who in a kindly, knowing, sympathetic way placed his hand on the little girl's brow and said "Why, we will not let you suffer; you will be well in a few days" did more for her endocrine glands, that storehouse of chemical activities in her body to ward off and cure disease, than anything that has been discovered in recent years. So we must realize in the practice of medicine that fear, ambition, love, hatred, pleasing impressions cause a great and lasting influence on the greatest of all chemical laboratories that we carry in our bodies from birth until death. Medicine can go forward only by a blend of the heart with science, both of which are governed by the head. The young man who puts financial relations above everything else loses all the pleasures and fun of the game.

Certainly and thankfully we are not all made alike. I have seen the most skilled internist fail to detect some acute condition in which surgery was imperative. On the other hand, I have seen the surgeon with great experience overlook complications of the lungs, the liver or the kidneys. A friendly, thoughtful consideration of a patient's illness may have so many ramifications that he is always benefited by the advice of several men thinking along different lines. If we older men have been guilty in this respect, how much more are we obligated to teach our younger associates by precept and example so that they may avoid our errors.

CONCLUSION

My thesis, then, is based on the fact that surgery as an art and a science is reaching a higher level of efficiency. This is the result both of teaching and of the untiring efforts of individual workers and cooperators. The present tendency is given to stressing the patient as a whole, the end in view being a restoration of physiologic harmony in the cure of his ailment. Thus the surgeon will come to treat and cure many diseases now considered incurable as well as many now considered nonsurgical in nature. Nor will he jealously insist on continuing the treatment of conditions which experience will prove, from time to time, can be better managed by other than surgical means.

Further and narrower specialization may follow, though in this respect we seem now to be approaching a logical limit. Especially is this true when we consider the ideal that the patient must be treated as a personality rather than as the harborer of a disease in which we happen to be interested.

Science, like Time, marches on. Progress beyond our wildest imaginings is coming. Surgery and medicine as a whole must and will continue in the vanguard.

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EVALUATION OF ENDOCRINE THERAPY IN PRIMARY DYSMENORRHEA

AN ANALYSIS OF THIRTY-NINE CASES

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This paper concerns that type of painful menstruation known as primary dysmenorrhea, for which there seems to be no adequate explanation. The clinical picture is well known. It is characterized by spasmodic pains beginning from thirty-six to forty-eight hours prior to or with the onset of the flow and subsiding during the first twenty-four hours of menstruation. Nausea and vomiting often accompany the attack. The very nature of the pain suggests its uterine origin. Such colic may arise from either heightened uterine contractions or painful spasm of the cervical sphincter. Evidence that both mechanisms may play a rôle has appeared recently in the literature.

However, if uterine colic per se is the cause of the pain, the primary cause of the disorder is still hypothetical. Some of the theoretical explanations are plausible, yet not one has attained universal acceptance, because of insufficient proof. The manifold forms of treatment that have been hopefully proposed, enthusiastically applied and regretfully discarded serve to emphasize the lack of knowledge of the etiology of primary dysmenorrhea. Each form of treatment is based on a different conception of the etiology of the malady.

THEORIES CONCERNING THE ETIOLOGY OF PRIMARY DYSMENORRHEA

In any study of primary dysmenorrhea, one must consider the constitutional and psychic background of the individual patient. The so-called constitutional inferior or the hypersensitive type (Libman) has a definitely increased pain reaction which may color the symptomatology and alter its clinical evaluation. Novak and Harnik [1] stress the importance of psychic trauma as an etiologic factor and maintain that psychotherapy relieves a large number of patients suffering from primary dysmenorrhea. However, neither a high degree of sensitivity to pain nor an apprehensive emotional state can possibly be the sole cause of any instance of primary dysmenorrhea. Perhaps the most important rôle played by the psychic element in this disease is that of complicating the proper evaluation of any therapeutic measure employed.

A neurogenic basis for primary dysmenorrhea has been advanced by some who ascribe the etiology to an abnormal reactivity of the cervical nerves. That nerve irritability or vagotonic spasm of the circular musculature of the isthmus may be a factor is favored by reports of relief through the use premenstrually of antispasmodics, such as atropine,[2] benzyl benzoate [3] and calcium.[4] A successful form of neurosurgical therapy, resection of the superior hypogastric plexus (presacral nerve), has been evolved.[5] That a full measure of relief follows such nerve resection is not surprising, since the pain-bearing fibers are severed. However, it is a relatively heroic procedure and should be reserved as a last resort in the treatment of primary dysmenorrhea. Others liken the disease to herpes zoster, regarding the ganglions of Frankenhäuser as the primary seat of disease and the pain as an expression of secondary neuralgia. Keiffer,[6] basing his theory on dissections of the pheochrome system of the uterus and the fact that stimulation of the internal os causes pain, uterine contractions and cervical spasm, attributes sphincteric powers to the cervical tissue. He looks on the cervix as a sphincter with its "tonus" governed by a reflex arc through the lumbar cord and cervical ganglions. Thus, an abnormal state of the cervical ganglions may be the immediate cause of the spasmodic pain. This hypothesis finds support in the work of Blos [7] and Kennedy.[8] Blos cured more than 90 per cent of dysmenorrheic patients whose cervical ganglions were injected with 70 per cent alcohol. Kennedy has offered experimental data which support the view that estrogenic substance not only stimulates growth and vascularity of the lower genital tract but also exerts a trophic influence on the cervical ganglions. In his study of the plexus of Frankenhäuser following castration, Kennedy [8] noted degeneration of the ganglion cells characterized by a decrease in the amount of Nissl substance and a diminished number of pheochrome cells. By the administration of estrogenic principle to castrated animals, Kennedy was able to reverse these changes, the ganglion cells becoming normal. Kennedy [9] further ascribes the therapeutic effectiveness of estrogenic substance in primary dysmenorrhea to its ability to restore the atrophic ganglion cells to normal, relieving both trophic hypoplasia and arrhythmic sphincter action of the cervix. Reports of relief of primary dysmenorrhea by the administration of estrogenic substances fairly abound in recent literature.[10] In my opinion, many of the reports err in describing the temporary relief of pain as a "cure."

Because dysmenorrheic patients usually, if not invariably, present other evidences of marked instability of the autonomic nervous system such as visceroptosis, gastro-intestinal spasticity and irritability of the bladder, primary dysmenorrhea must be viewed as being a local manifestation of a constitutional disease. In fact, Dutta,[11] Smith [12] and Cooke [13] have recently suggested that primary dysmenorrhea may be the expression of an allergic state. They found unusual sensitivity to

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7. Blos, D.: Dysmenorrhoebehandlung durch Alkoholinjecktion, München. med. Wchnschr. **76:** 1173 (July 12) 1929.

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certain foods or inhalants in most of their patients and offered desensitization treatment as a remedial agent in primary dysmenorrhea. This phase of the subject requires further investigation. Another debatable explanation is given by Whitehouse,[14] who attempts to explain all primary dysmenorrheas on the basis of membranous dysmenorrhea. He claims to have found pieces of hyperplastic endometrium in the menstrual discharges of fifty patients with primary dysmenorrhea and concludes that the expulsion of the hyperplastic endometrium gives rise to pain. The obvious question arises, Why is there an absence of dysmenorrhea in a large number of women with hyperplasia of the endometrium? Moreover, premenstrual endometriums of patients suffering from primary dysmenorrhea are usually in a normal secretory phase, which is a finding incompatible with the existence of endometrial hyperplasia.

The oldest explanation of the origin of primary dysmenorrhea is the one ascribing the pain to mechanical obstruction of the cervical canal. Theoretically, such an obstruction would cause retention of discharges and distention (pressure) pain. Fifty years ago it was inconceivable that there could be a cause for primary dysmenorrhea other than an obstruction caused by congenital or acquired cervical stenosis, pathologic anteflexion of the uterus, or cervical myomas. Thus, the operation of cervical discission, the use of the stem pessary and the application of the metronoikter enjoyed great popularity. However, it became apparent that not all patients with primary dysmenorrhea present anatomic obstructions and that many patients with acutely anteflexed uteri are entirely free from menstrual pain. Eliminating the few patients with primary dysmenorrhea who present real cervical obstruction and who, accurately speaking, do not belong in the category of primary dysmenorrhea, one cannot deny that cervical dilation alone frequently relieves the pain. However, this fact does not prove the validity of the obstructive theory. In view of the newer knowledge of cervical function[6] and the trophic purposes of the cervical nerves,[8] the relief of primary dysmenorrhea following cervical dilation may be credited to a stimulative effect on the ovaries.[15] Such a result would be analogous to the ovarian reaction produced by mechanical or electrical stimulation of the cervix in experimental animals (pseudopregnancy).

Almost as time honored an explanation of the cause of primary dysmenorrhea as is the obstructive theory is that of uterine hypoplasia, first propounded by Schultz[16] in 1903. The hypothesis suggests that primary dysmenorrhea is caused by stagnation of blood in the uterine sinuses and subsequent pressure pain because of insufficient musculature in an underdeveloped uterus. The most important argument against this theory is the fact that many women with the pituitary type of uterine hypoplasia are free from dysmenorrhea, whereas women with uterine hypoplasia of the primary ovarian type, characterized by a superlatively feminine appearance, gastro-intestinal irritability and emotional disturbances, have a high incidence of primary dysmenorrhea.[17] These facts and the additional observation that the uteri of patients with primary dysmenorrhea are often normal in size and consistency serve to emphasize the obvious fallacy in regarding hypoplasia as the sole cause of primary dysmenorrhea. However, the hypothesis of Schultz and the known ability of the ovarian follicular hormone, the estrogenic principle, to induce growth and vascularity of the lower genital tract (including the cervix uteri) form a theoretical background for the use of estrogenic substances in the treatment of primary dysmenorrhea.

Following the researches of Reynolds,[18] an endocrinopathic etiology for primary dysmenorrhea was propounded.[19] By means of an ingenious uterine fistula in an unanesthetized rabbit, Reynolds found that the normal uterine contractions disappear following castration, that administration of estrogenic substance restores them to renewed vigor and that the contractions produced by estrogenic substance are easily abolished through injections of corpus luteum hormone, progestin, or the gonadotropic principle in the urine of pregnant women. Thus, it was shown that the gonadotropic substance present in the urine of pregnant women simulates progestin in its quieting action on uterine muscle. More remarkable was Reynolds' observation that gonadotropic substance exerts its inhibitory effect on uterine contractions induced by estrogenic substance in the presence or absence of the ovaries, suggesting a direct uterine effect. Morgan[20] confirmed the work of Reynolds in the intact animal but found no quieting effect of gonadotropic substance on the uterine muscle in castrated animals. Thus, it was established that the excitant and the inhibitor of uterine contractions are ovarian follicular hormone and corpus luteum principle, respectively. These observations led Novak and Reynolds[19] to attribute primary dysmenorrhea to a premenstrual imbalance of the two ovarian hormones controlling uterine contractions, either an excess of estrogenic substance or a deficiency of the corpus luteum principle. Under such an abnormal endocrine influence the endometriums of dysmenorrheic women should invariably show a deficiency or a total absence of the secretory phase. That this is usually not the case is shown by a study[21] of the premenstrual endometriums in twenty women with primary dysmenorrhea, fourteen of whom showed normal secretory endometriums (progestin phase).

The use of corpus luteum substance in the treatment of primary dysmenorrhea was first recommended by Novak and Reynolds[19] on the strength of their theory. In the absence of an adequate commercial supply of the principle and in view of Reynolds' observations of the direct uterine effect of gonadotropic substance from the urine of pregnancy, the latter was suggested as a likely substitute. Recently, Witherspoon[22] and Browne[23] have reported on relief of dysmenorrhea with the use of urinary gonadotropic substance.

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RESULTS OF ORGANOTHERAPY

As previously mentioned, two endocrine substances (estrogenic substance and corpus luteum principle) have been advocated for the treatment of primary dysmenorrhea. Both forms of organotherapy are theoretically convincing. The corpus luteum substance (progestin) and its substitute, urinary gonadotropic substance, reduce the sensitivity of uterine musculature, but at best the effect would be purely temporary. The estrogenic principle supposedly removes painful cervical spasm either by inducing growth and vascularity of the hypoplastic cervix (Schultz) or by correcting disturbances of the cervical ganglions (Kennedy).

Bearing all this in mind, my associates and I have employed both modes of organotherapy in thirty-nine patients with primary dysmenorrhea. The duration of the dysmenorrhea prior to treatment was more than eighteen months in each instance, and the average duration was four years. The pelvic organs, as far as one could determine by examination, were normal with the exception of palpable uterine hypoplasia in some

Observations on Endocrine Therapy in Thirty-Nine Patients With Severe Primary Dysmenorrhea

Form of Endocrine Therapy	Dose and Average Duration of Treatment	Number of Patients	Results			
			Cured	Temporary Relief	Substitutive Relief	Failure
Urinary gonadotropic principle (antuitrin-S)	200 rat units every other day for from 2 to 3 months	10	1	0	3	6
Estrogenic principle (emmenin)	1 tablespoonful (75 day-oral units) three times a day for from 3 to 5 months	10	1	0	2	7
Estrogenic principle (progynon)	600 rat units three times a day for from 3 to 4 months	6	0	0	1	5
Estrogenic principle (progynon-B)	5,000 to 10,000 rat units every fourth day for from 3 to 4 months	13	0	4	6	3
Totals		39	2	4	12	21

instances. The ages of the patients ranged from 17 to 28 years. Thirty of the thirty-nine patients were nulliparas, and twenty-six of the group were sterile or had menstrual disorders (oligomenorrhea or hypomenorrhea). Ten were treated with a commercial gonadotropic substance obtained from pregnancy urine (antuitrin-S). Sixteen received small, oral doses of estrogenic substances (as liquid emmenin or progynon tablets). Thirteen were given large hypodermic doses of estrogenic principle in the form of hydroxyestrin benzoate (progynon-B). The substances were administered during the entire menstrual cycles for periods averaging three months. The results of treatment, as shown in the accompanying table, were tabulated as follows: "cured," when the patient remained well for a year or more after withdrawal of treatment; "temporary relief," when the patient was free from pain during the course of treatment and for from two to four months afterward; "substitutive relief," when the patient was entirely free from dysmenorrhea only while receiving treatment and in whom there was an immediate recurrence of dysmenorrhea on withdrawal of therapy; and "failure," when the patient obtained no relief from the treatment.

Urinary Gonadotropic Substance.—Ten of the thirty-nine patients received antuitrin-S subcutaneously every other day in doses of 200 rat units (2 cc.) for periods of from two to three months. Four patients of this group experienced relief from dysmenorrhea: one has remained well for a period of fourteen months after withdrawal of treatment, and the other three had painless periods during the course of treatment only. The remaining six patients of this group were unaffected by the treatment. There were no constitutional effects noted as a result of the administration of the urinary gonadotropic substance. However, some of the patients, at some time during the course of treatment, complained of pain, redness and swelling at the site of injection. Such local reactions ordinarily subsided within twenty-four hours.

Small Oral Doses of Estrogenic Principle.—Sixteen of the thirty-nine patients were given small oral doses of estrogenic substances. Ten of the sixteen patients received a complex containing trihydroxyestrin (emmenin) in doses of 1 tablespoonful (approximately equivalent to 75 day-oral units) three times daily for periods averaging four months. Three patients of the ten so treated were relieved of pain: one has remained symptom free for one year following the course of treatment, and the other two were relieved only while the emmenin was administered. The dysmenorrhea of the remaining seven patients who received emmenin was unaffected by the therapy. Six of the sixteen patients were given a commercial preparation containing ketohydroxyestrin and trihydroxyestrin (progynon tablets) in doses of 600 rat units three times daily for periods averaging three months. One patient was free from dysmenorrhea while under treatment; the remaining five patients were unrelieved. There were no constitutional effects noted as a result of these small oral doses of estrogenic principle.

Large Doses of Estrogenic Substance.—Thirteen of the thirty-nine patients were treated with estrogenic substance in the form of hydroxyestrin benzoate (progynon-B) administered intramuscularly in doses of 5,000 to 10,000 rat units every fourth day for from three to four months. Of this group, six were entirely free from pain only while the substance was administered and four remained symptom free from two to four months following withdrawal of treatment. The remaining three patients of this group were unaffected by the therapy.

It is interesting to note the absence of any constitutional effects, aside from a temporary disturbance of the menstrual cycles in several patients, following the administration of such massive doses of estrogenic substance (from 200,000 to 320,000 rat units during three to four months). The fact that such large doses of estrogenic principle are well tolerated and cause no constitutional disturbances in the human being was previously established by Mazer, Meranze and Israel.[24] Three of the eight regularly menstruating women in this group of thirteen patients experienced a delay of from one to three weeks in the onset of a single period while under treatment, but menstruation was regular subsequent to the withdrawal of treatment. This temporary menstrual disturbance—a delay of a single period and the establishment of a new date of onset of the subsequently regular cycles (irrespective of continued therapy)—was likewise noted in six of seventeen regularly menstruating women subjected to similar treatment for other conditions.[24] Kurzrok and his asso-

24. Mazer, Charles; Meranze, D. R., and Israel, S. L.: Evaluation of the Constitutional Effects of Large Doses of Estrogenic Principle, J. A. M. A. **105**: 257 (July 27) 1935.

ciates [25] observed a similar, temporary disturbance of the menstrual cycles of women under treatment with large doses of estrogenic substance.

SUMMARY

1. From a review of the literature, primary dysmenorrhea is shown to be a disease of conflicting theories. No satisfactory explanation of its etiology exists.

2. Two forms of endocrine therapy have been proposed for primary dysmenorrhea, estrogenic substance and (in the absence of progestin commercially) urinary gonadotropic substance. As shown in the present study of thirty-nine patients, both forms of organotherapy are disappointing.

3. Urinary gonadotropic substance (antuitrin-S) administered to ten patients cured one and temporarily relieved three of dysmenorrhea.

4. Estrogenic principle, given orally in small doses (emmenin liquid or progynon tablets) to sixteen patients, cured one and afforded temporary relief to three of the patients.

5. Estrogenic substance, given hypodermically in large doses (progynon-B) to thirteen patients, produced no permanent results. Ten patients were temporarily relieved and three were totally unaffected by the therapy.

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From the Mayo Foundation.

CLINICAL OBSERVATIONS WITH INSULIN PROTAMINE COMPOUND

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Two papers that appeared in a recent issue of THE JOURNAL, one by Hagedorn and his associates [1] of the Steno Memorial Institute of Copenhagen, the other by Root, White, Marble and Stotz [2] of the New England Deaconess Hospital, have aroused widespread interest in insulin protamine compound. This new remedy for diabetes already has been distributed to a good many physicians and soon will be on the market and available to all. For this reason it seems to be desirable to make available to others the experience that we have had with it.

The Danish investigators found that insulin, precipitated from solutions of insulin hydrochloride with monoprotamine compounds and suitably buffered, was relatively insoluble in tissue fluids so that its absorption was delayed and its action correspondingly prolonged. They demonstrated that such insulin facilitated the management of cases of severe diabetes as indicated by smaller fluctuations of the sugar in the blood. The best results usually were obtained by giving the patient "ordinary" insulin in the morning and insulin protamine compound in the evening or with two doses of insulin protamine compound a day. A few cases were treated effectively with a single dose. In many cases a smaller dose of insulin protamine compound was required than the dose of ordinary insulin used before. A more detailed report of the clinical studies in the Steno Institute is contained in a monograph by Krarup.[3]

The Boston physicians were able to confirm the Danish observations. Wide fluctuations in the levels of the blood sugar were less frequent and hypoglycemic reactions were largely avoided. At the time of writing, their experience was limited to fifteen cases; but since then they have treated more than eighty patients, with results that are pleasing.[4] In their paper they commented on certain inconveniences. The compound is not indefinitely stable and the protamine must be added to a given vial of insulin only as the insulin is needed for use within the ensuing few days. Since then they have found that it is stable for four weeks. Furthermore, the addition of the protamine, which they thought must be made with a dry, cool syringe, can now be made with a syringe which is wet with ethyl alcohol in which it has been kept for the purpose of insuring its sterility. The schedule of procedure in the Deaconess Hospital has been like that of Hagedorn; namely, the use in most cases of regular insulin in the morning and of the new preparation for the evening injection.

Our experience with insulin protamine compound (insulin-P [5]) is brief but intensive.[6] Only twenty patients have been treated at the time of this writing, but nearly all of them have been the subjects of prolonged observations in the hospital with trials of various schedules of administration of insulin. In the course of the observations more than 2,000 analyses have been made of the content of blood sugar, using in each instance capillary blood obtained from a finger or a lobe of an ear and subjected to the micro-analysis, for dextrose, of Folin. Ten of the twenty patients represented cases in which control of glycosuria and attacks of acidosis was exceedingly difficult or impossible with insulin-R.[5] We grade such cases 4+. Seven other patients had diabetes of such severity that three or four injections daily and a total dose of more than 50 units of insulin-R had been required to maintain control. The remaining patients required from 30 to 50 units daily in two or three divided doses. Ten of the patients were children. The duration of the disease in every case was more than three years and in many cases the patient had been under our care for ten years or more. In most cases, with the use of a single administration of insulin we have been able to attain better control of glycosuria and a more stable level of the blood sugar than previously had been possible with multiple doses of insulin-R. Frequently, as will be described, this administration has consisted of the injection simultaneously, but in separate sites, of insulin-P and insulin-R.

TIME OF INJECTION OF INSULIN

We were led to the single matutinal administration of insulin-P, with or without supplementary insulin-R, by what appeared to be conclusive evidence that the action of insulin-P was prolonged for more than twenty-four hours and the observation that much of

1. Hagedorn, H. C.; Jensen, B. N.; Krarup, N. B., and Wodstrup, I.: Protamine Insulinate, J. A. M. A. **106**: 177-180 (Jan. 18) 1936.

2. Root, H. F.; White, Priscilla; Marble, Alexander, and Stotz, E. H.: Clinical Experience with Protamine Insulinate, J. A. M. A. **106**: 180-183 (Jan. 18) 1936.

3. Krarup, N. B.: Clinical Investigations into the Action of Protamine Insulinate, Copenhagen, G. E. C. Gad, 1935.

4. Root, H. F.: Personal communication to the authors.

5. For convenience of expression we have adopted the designation insulin-R for the regular water soluble insulin hydrochloride, and insulin-P for insulin protamine compound.

6. A small supply of insulin protamine compound was received from Dr. Hagedorn early in January. For this we wish to express our appreciation. Soon thereafter and regularly since then other material has come from the Eli Lilly Company, through the courtesy of Dr. G. H. A. Clowes. The observations to be reported were made with the preparation of the Eli Lilly Company.

the effectiveness of insulin-P remains in abeyance until after the lapse of from four to six hours. An observation which reveals the absence of a quick effect, and also shows the late action, is recorded graphically in chart 1.

A woman, aged 49, who had diabetes of nine years' duration, had been under intermittent treatment by us since 1927 and was customarily receiving 55 units of insulin-R daily and a diet containing 111 Gm. of carbohydrate, 65 Gm. of protein, and 127 Gm. of fat. On the morning of February 2, 35 units of insulin-R was injected twenty minutes before the morning meal. The blood sugar stood at 385 mg. per hundred cubic centimeters. It dropped rapidly and reached a low point of 150 at 2 p. m. The noon and evening meals were withheld and no more insulin was given until 7 o'clock the following morning. By evening the blood sugar had returned to the original level and the next morning it stood at 425 mg. per hundred cubic centimeters. Symptoms of acidosis were noticeable during the night, and before morning the patient was nauseated and was vomiting, with abdominal pain and air hunger. The carbon dioxide combining power of the blood plasma was 28 volumes per cent, and the urine for this period of twenty-four hours contained 41 Gm. of dextrose and much acetone and diacetic acid. This, it should be emphasized, occurred after a single injection of regular insulin, insulin-R.

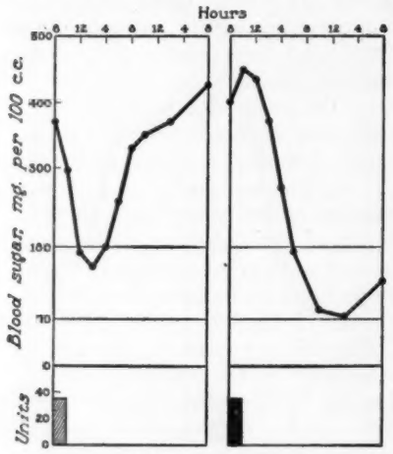

Chart 1.—Effect of 35 units of regular insulin compared to that of the same dose of insulin protamine compound. Breakfast, containing 38 Gm. of carbohydrate, was served on these days but no other meals. Symptoms of severe acidosis developed the morning following the administration of the regular insulin; no such symptoms the morning following the administration of insulin protamine compound. In the charts the shaded columns represent ordinary insulin, the black columns insulin protamine compound.

Treatment was instituted. It involved injecting 1,000 cc. of physiologic solution of sodium chloride and giving repeated doses of insulin-R. Three days later, February 5, the acidosis in the meantime having been brought under control, a similar study was made after injecting insulin-P in a dose of 35 units. The blood sugar stood at 400 mg. per hundred cubic centimeters, about the same level as before. The breakfast was served and the noon and evening meals were withheld as they had been before. No more insulin was given. The blood sugar increased after breakfast to a peak of 530 mg. per hundred cubic centimeters, reached at 10 a. m. It then fell gradually and steadily until, at 2 a. m., February 6, it stood at 160. At 7 a. m., February 6, it was 270. The urine for the twenty-four hour period contained more sugar than it had in the experiment with insulin-R, but the single specimen of the morning of February 6 contained only a trace of sugar, and the patient, instead of presenting a condition verging on coma, was perfectly comfortable, free from any signs of acidosis, with no acetone to be smelled on the breath, and none demonstrable in the urine. Chart 1 shows the observation of February 2 on the left and the important data of another observation like that of February 5 on the right. This time a single injection of 35 units of insulin-P, with breakfast, but not followed by other meals or more insulin, left the blood sugar at 145 mg. per hundred cubic centimeters the succeeding morning.

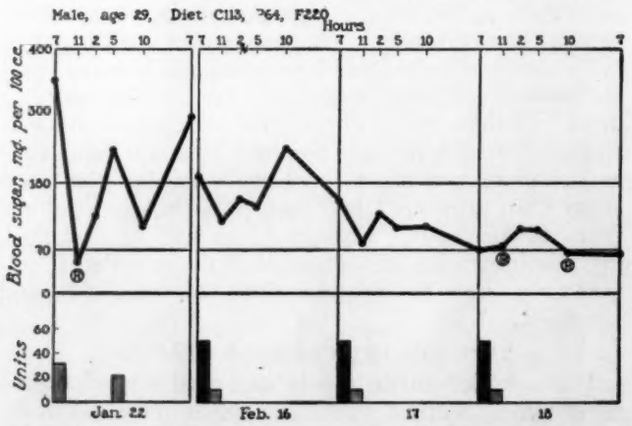

Chart 2.—Improved control of glycosuria with insulin protamine compound supplemented with a small dose of regular insulin. The letter R enclosed in a circle in this and other charts indicates reaction. In no case were these reactions severe. The full effectiveness of insulin protamine compound is not apparent until the third day after the administration of the given dose.

Insulin-P, when given before breakfast to a patient receiving the three meals of his regular diet, may not control the elevating effect of breakfast on the blood sugar. By noon, however, its action is apparent. Furthermore, when the case finally is brought under complete control, so that the blood sugar before breakfast is normal, the rise following breakfast frequently has not been enough to provoke glycosuria. In cases in which glycosuria occurs after breakfast, and in many cases for the first few days after beginning the use of insulin-P, we have administered a small dose of insulin-R as a supplement to insulin-P. Usually the insulin-R has been given at the same time; that is, in the morning. The insulin-R must be injected in a separate site; if it is mixed with insulin-P it is combined by the excess of protamine in the insulin-P and its quick effect is lost.

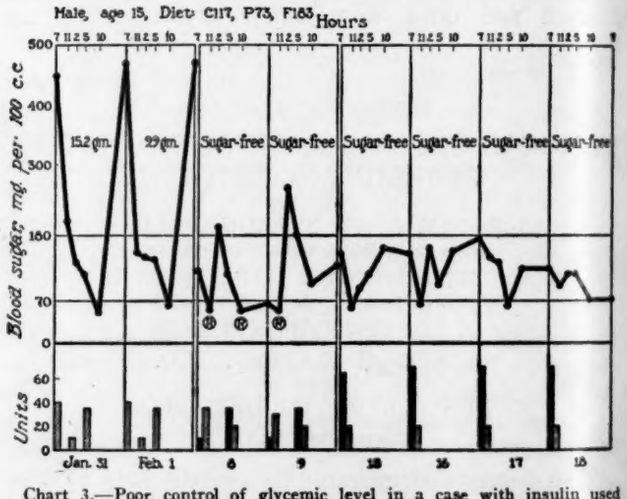

Chart 3.—Poor control of glycemic level in a case with insulin used in multiple doses compared to satisfactory control, after February 15, with a single dose of insulin protamine compound supplemented with a small dose of regular insulin.

In cases of severest diabetes, large doses of insulin have been required. For instance, in one case 70 units of insulin-P and 30 units of insulin-R were given before breakfast. The blood sugar at the time of the injection was 90 mg. per hundred cubic centimeters, at 11 a. m. 70, at 2 p. m. 160, at 5 p. m. 100 and at 10 p. m. 75. The following morning it was 65 mg. per hundred cubic centimeters. This dose was excessive; it was diminished the following day.

Illustrations of satisfactory control of the blood sugar level with morning injections of insulin-P supplemented with a small dose of insulin-R are given in charts 2 and 3. The blood sugar values in a case in which, after four days, only insulin-P was used are shown in chart 4. It should be emphasized that although single, large

doses of insulin-P apparently are safe in severe cases, when the patient takes his food, it is very important, if he receives such doses, that he get the food. Should a patient refuse his food, after receiving an injection before breakfast, periodic administrations of dextrose would be indicated for the remainder of the ensuing twenty-four hours.

In order to obtain more information about this we gave 50 units of insulin-P in one case, withheld food and followed the blood sugar level by examination at frequent intervals (chart 5).

The patient previously had been brought under good control with single morning injections of 60 units of insulin-P. It happened that the blood sugar on the morning of this investigation was higher than it had been on previous mornings. Beginning at 286 mg. per hundred cubic centimeters it fell slowly, not reaching a level below 70 mg. per hundred cubic centimeters until 5 p. m. By 10 p. m. it was 45 mg. per hundred cubic centimeters and it stayed close to this level until the following morning. Fasting was continued and, although no more insulin was given the blood sugar remained below 50 mg. per hundred cubic centimeters in this, the second, day until 9 p. m., thirty-eight hours after the injection of insulin. At 9 p. m. of the second day the very low value of 25 mg. per hundred cubic centimeters was encountered and, fearing possible injury to the patient from such severe and long continued hypoglycemia,

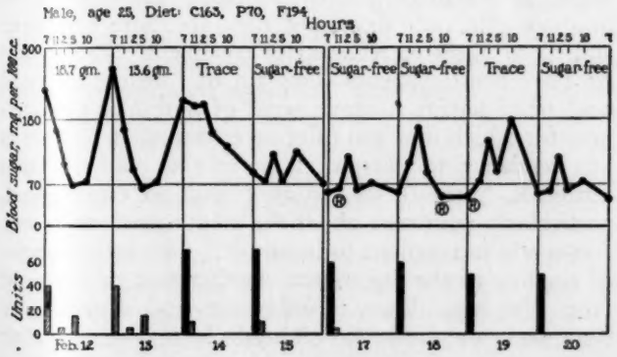

Chart 4.—Satisfactory control of glycemic level with single doses of insulin protamine compound given before breakfast.

we supplied food until sugar appeared in the urine. No alarming symptoms accompanied this hypoglycemia, although periodically, but not continuously, after 7 p. m. the first day the patient complained of nausea, weakness, nervousness and headache. In the evening of the second day there was increased nervousness leading to restlessness and some confusion. Exaggeration of tendon and diminution of cutaneous reflexes were found at this time. They had been normal before. Amnesia did not develop.

THE DIET

Because of the better control of the level of the blood sugar with insulin-P we recently have deviated from our usual procedure and have provided diets that contained from 160 to 170 Gm. of carbohydrate. Their content of protein has been about 70 Gm., and enough fat has been added to bring the calories to a number that would represent 50 per cent more calories than the patient would expend at rest. The diet has been given in three meals and recently the carbohydrate has been apportioned approximately on a 20-40-40 basis; in other words, the breakfast provides only about half as much dextrose as do the later meals. The slow development of the maximal effectiveness of insulin-P makes this desirable. Hagedorn, giving insulin protamine compound in the evening, divided his diet so that about 40 per cent of the carbohydrate came in the breakfast, 40 per cent in the lunch and 20 per cent in the supper.

In one case we departed radically from our usual dietetic procedure and permitted the patient to have three meals a day from the general kitchen. The only restricted foods were candy and raw sugar. The patient was severely diabetic, but her management had been satisfactory with a diet containing 167 Gm. of carbohydrate and a single matutinal dose of 50 units of insulin-P a day. When the "general diet" was prescribed, the dose of insulin-P was increased to 60 units. The result is shown in chart 6. For the first two days glycosuria occurred but later the control was excellent. This probably is not the way to treat diabetes even with insulin-P. Undoubtedly other patients who have more severe forms of the disease would not have done so well with such an irregular arrangement. Yet it does suggest that in many cases insulin-P may permit less rigidity in dietary management than heretofore has been necessary to secure satisfactory therapeutic effects.

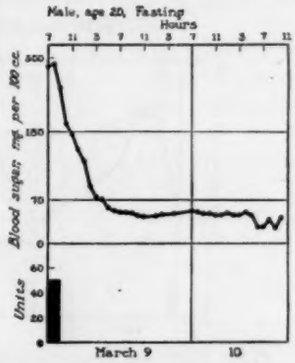

Chart 5.—Effect of a single large dose of insulin protamine compound when food was withheld. Hypoglycemia existed from the ninth to the thirty-ninth hour after the injection of this dose of insulin. It was then corrected by administering food.

ESTIMATING THE DOSE OF INSULIN-P

For patients who previously are under control, or nearly so, with divided doses of insulin-R, we have been making an immediate substitution of one dose of insulin-P, with or without a small dose of insulin-R, for the previous total daily divided dosage of insulin-R (chart 4). No untoward effect has been observed, probably because the final effectiveness of the insulin-P is delayed even beyond the day of its administration. If no insulin-R is used, a fairly intense glycosuria may occur for the first few days. This has not been accompanied by serious ketonuria. Gradually the daily excretions of dextrose diminish and usually by the sixth or seventh day control is as good as or better than it was before with multiple injections of insulin-R. At some

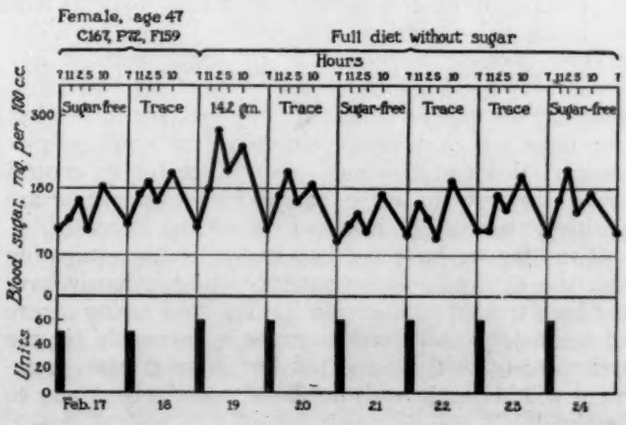

Chart 6.—Satisfactory control of glycemic level, in a case of diabetes, with single doses of insulin protamine compound given before breakfast and a general diet.

time later smaller doses of insulin-P may suffice, so that an actual saving of insulin is accomplished. Our results to date do not permit definite conclusions as to the amount of saving possible, although in some cases the saving in unitage has amounted to more than 30 per cent. If the original dose of insulin-P is supplemented by small doses of insulin-R, the initial period of intense glycosuria is shortened or may be avoided.

When using insulin-P, one is aiming about seventy-two hours ahead. Changes in the dose of insulin-P in either direction are not accurately reflected in the level of the blood sugar on the day the change is made. This is illustrated in charts 7 and 8. The patient the curve of whose blood sugar is shown in chart 7 reacted to the point of amnesia on the morning of March 8, although three of the four single specimens of urine on the day before had contained sugar. Therefore the

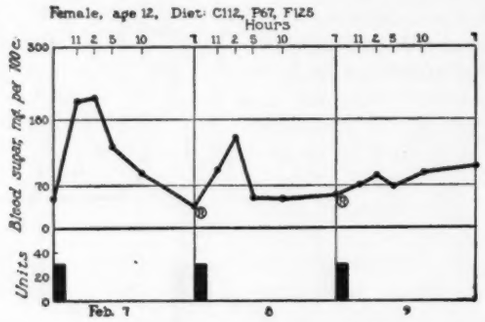

Chart 7.—When insulin protamine compound is used, the level of blood sugar before breakfast is the best index of the dose required. Hyperglycemia and glycosuria occurring later in the day do not preclude the possibility of reaction the following morning.

test for sugar of the morning urine is probably a more reliable simple index of the requirement of insulin-P than are the tests made during the day. The following working rule has been adopted recently: When the tests of the morning urine have shown no sugar for three days in succession and if reactions have occurred at night or in the early morning, the dose of insulin-P should be lowered. When the morning tests show sugar for three days in succession, the dose of insulin-P should be raised. Increasing or decreasing the dose by more than 5 units seldom is desirable.

It seems probable ultimately that the patient will take a basic dose of insulin-P, suited to his tolerance and usual activities, that this dose will be changed infrequently, and that small doses of insulin-R will be added as required to prevent occasional glycosuria provoked by infection or other causes. Occasionally patients who are being well controlled with insulin-P may, for a day or two, excrete a good deal of sugar without any apparent reason. This seems to have no bad effect and may be ignored unless it continues for more than two days. If it persists, either a few small supplementary doses of insulin-R may suffice for its control or, if the tests of urine passed before breakfast are positive, the dose of insulin-P should be increased.

Thus far we have not had experience in estimating the dose of insulin-P for patients who previously have not been treated with insulin-R. The slow acting nature of insulin-P would seem to make it unsuitable for the treatment of acidosis and possibly in most cases treatment will be begun with insulin-R and changed later to insulin-P.[7]

7. More recently we have observed that insulin protamine compound is helpful in the management of diabetic acidosis. Thus, to two patients admitted to the hospital with threatening coma the compound was given in a single dose of 50 units and the patients then were treated with regular insulin in the conventional manner. Less frequent doses of regular insulin subsequently were required than usually are necessary for the treatment of acidosis. The duration of effectiveness of a dose of regular insulin apparently is shortened by acidosis and, unless regular insulin is given in frequently repeated doses, intervals occur when the patient may be without the benefit of any insulin. Insulin protamine compound, administered at the beginning of such treatment, seems to tide over these intervals and to insure a continuous insulin effect. Similarly in cases complicated by acute infections, which also shorten the duration of effectiveness of insulin, insulin protamine compound has been helpful —not to replace regular insulin but as an adjunct to it, to insure continuous insulin activity.

SITE OF INJECTION

Changing the site of injection or giving multiple injections simultaneously seems not to influence the effectiveness or speed of action of insulin-P. Our observations on this point are limited to one case. But with this patient, giving 65 units in one subcutaneous depot had the same effect as giving the same total dosage in four separate depots. Likewise no difference could be observed in the effect obtained, in one case, when the insulin was injected intramuscularly.

REACTIONS

Partly because of an early ambition to maintain the sugar in the blood near normal levels at all times, and partly because of early unfamiliarity with the continued action of insulin-P remote from the time of injection, we have had occasion to observe rather numerous reactions, particularly in our earlier cases. These reactions have never been very severe, nor, in the cases treated in a routine manner, have we encountered any extreme degrees of hypoglycemia.

The reactions with insulin-P characteristically are less violent than those following the use of insulin-R. This probably is because the rate of decline of the blood sugar is so much more gradual. Their onset is insidious, but once developed they are more persistent and more likely to recur after treatment. Frequently we have heard patients complain of "feeling all tired out" or of having a vague sense of unrest or nervousness for which they can offer no explanation. There is less tendency to perspire than in the reaction from insulin-R. Paresthesia and anesthesia are experienced, particularly numbness about the mouth, such as is seen frequently in reactions to insulin-R. One patient spoke of tingling of the fingers and another said he felt dead from the hips down. Amblyopia and diplopia are common complaints. A dull headache may persist after

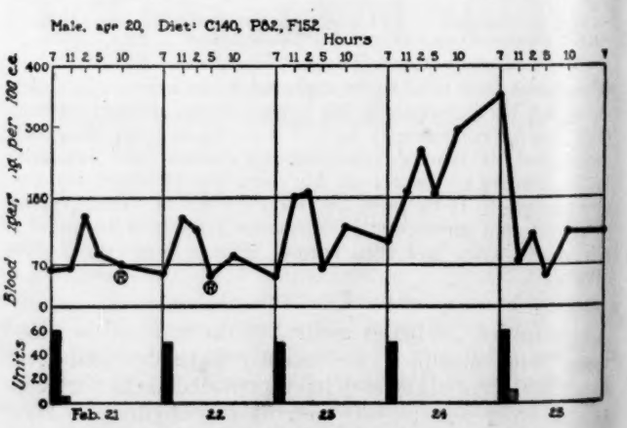

Chart 8.—Loss of satisfactory control of glycemia from inadequate dose of insulin protamine compound. The inadequency of the dose is not apparent until the third day. Previously satisfactory control had been secured with 60 units of insulin protamine compound supplemented with 5 units of regular insulin.

other symptoms have subsided. Amnesia characterizes reactions of greater severity. Convulsions have not been observed except in one case; the patient is a child who twice has had slight intermittent convulsive movements of the arms and legs in the early morning hours. In three cases nausea has accompanied the reaction but has disappeared on the administration of food.

The time of occurrence of reaction, after single morning doses of insulin-P, has been remote from a preceding meal. Some reactions have been at night.

These reactions were mild, but we feel that the dangers of even mild reactions of long duration should be emphasized.

The relief of the symptoms of reaction by the administration of small doses of sugar (from 5 to 10 Gm.) may be temporary. Such a dose has been adequate only when the time until the next meal has been brief. Reactions occurring in the evening have been combated effectively by giving repeated small doses of sugar or, better, by giving some form of carbohydrate, such as crackers and milk, with a longer period of absorption.

SUBJECTIVE IMPROVEMENT

Several patients have commented that they felt fitter after starting their treatment with insulin-P. They arise from the night's sleep feeling more alert and they are stronger. They appear more alert. This has been noted especially in those cases graded 4 +, in which previously, with insulin-R, satisfactory control had not been obtainable.

PRECAUTIONS

While our experience has led us to the belief that better therapeutic results are obtainable with insulin-P than were formerly obtained, it is not to be supposed that the new remedy can be used safely unless precautions are exercised. The right dose must be chosen, and the diet ought to be supervised. This potent drug has a complicated action and it should not be dispensed casually. It offers a further challenge to the intelligence of the medical profession. If it is used unwisely, imperfect results or bad reactions may discredit it. Certainly at first no one should use it unless he places his patient in a hospital where continuous supervision can be maintained and facilities are available for testing the sugar in the blood. The patients must have been fully instructed regarding their diet, the recognition of the prodromes of reaction and the niceties of planning the size of their injections, before it will be safe for them to use this treatment in their homes.

SUMMARY

The immediate effect of insulin-P (insulin protamine compound) is much less than that of insulin-R (regular insulin). When the former is used alone, and given as a single dose before breakfast, the meals of the first few days provoke glycosuria, but when the dose is properly adjusted the level of the blood sugar on successive mornings decreases progressively and the elevating effect of meals diminishes until, by the end of from four to six days, a normal level of blood sugar may be attained even in cases of severest diabetes.

Supplementing insulin-P with small doses of insulin-R will shorten the period of obtaining control. Insulin-R should not be mixed in the same syringe or injected into the same site with insulin-P. It has not been necessary to continue the supplementary use of insulin-R after the first few days in the milder cases, but probably in many cases such supplementary use of insulin-R will be desirable, especially in emergencies. Until more experience has been obtained it would appear that insulin-R will be the insulin of choice when quick action is desirable, as in the treatment of acidosis.[7]

Although insulin-P, in many cases, makes possible effective management of diabetes with only one administration of insulin a day, and with less insistence on rigid control of the diet, its careless use or disregard of the diet is attended with danger.

GLYCOSURIA AND HYPERGLYCEMIA IN CORONARY THROMBOSIS

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AND
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BROOKLYN

The clinical association of diabetes mellitus and coronary disease has been an accepted fact for many years. Levine,[1] in a study of 103 patients with angina pectoris, found that 6.8 per cent showed well defined diabetes. (In a second series of 145 similar cases he[2] found 23.7 per cent to have either glycosuria or known diabetes.) A study by Kahn[3] showed that 12 per cent of eighty-two patients complaining of angina pectoris had true diabetes, and a similar investigation by Conner[4] revealed that 10 per cent of his patients with coronary thrombosis had diabetes.

The tendency of the arteries of diabetic patients to undergo marked sclerosis has long been known, attention having been called to the frequency in diabetes of peripheral gangrene and the presence of sclerotic vessels in limbs amputated for this reason. Warren[5] found thrombosis of the coronary arteries with recent or healed infarction of the heart muscle in 12 per cent of a large series of cases of diabetes that came to autopsy. Nathanson[6] in an analysis of seventy-four diabetic patients past the age of 50 found a 52.7 per cent incidence of coronary disease, as evidenced by severe arteriosclerosis with definite narrowing and marked obliteration of the lumen of one or more large branches. The same author in 249 consecutive autopsies on patients past the age of 50 found only 8.2 per cent showing similar changes. Hepburn and Graham,[7] studying by means of the electrocardiograph diabetic patients of all ages, found significant abnormalities in almost half of the cases, which abnormalities for the most part were characteristic of coronary disease.

This association of diabetes and coronary closure has led many authors to look for a causal relationship between the two. Joslin[8] in 122 cases of angina pectoris associated with diabetes found that in 106 the onset of diabetes distinctly preceded the angina. In these cases he believed that the coronary sclerosis was secondary to the diabetes and that the duration of the latter was the important factor, since he found that diabetes of five years' duration or longer was practically always accompanied by some degree of arterial change. Joslin regarded the hypercholesterolemia of diabetes as being the responsible factor. While in those of advanced years there is the possibility that arteriosclerosis is the basis for the pancreatic changes, in the young the evidence is very strong that diabetes has caused the sclerotic changes.[9] Root and Graybiel[10] maintain that diabetes is always the primary disease

From the Medical Service of Dr. Meyer A. Rabinowitz, Brooklyn Jewish Hospital.

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2. Levine, S. A.: Coronary Thrombosis, Medicine **8:** 245 (Sept.) 1929.
3. Kahn, M. H.: Etiologic Factors in Angina Pectoris, Am. J. M. Sc. **172:** 195 (Aug.) 1926.
4. Conner, L. A., and Holt, E.: The Subsequent Course and Prognosis in Coronary Thrombosis, Tr. A. Am. Physicians **45:** 132, 1930.
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9. Joslin, E. P.: Arteriosclerosis in Diabetes, Ann. Int. Med. **4:** 54 (July) 1930.
10. Root, H. F., and Graybiel, Ashton: Angina Pectoris and Diabetes Mellitus, J. A. M. A. **96:** 925 (March 21) 1931.

that calls forth the changes in the coronary vessels and argue against the two having a common etiology. They point out that most anginal attacks appear at an age when most diabetic patients already have had their disease for from eight to ten years. Scherf [11] makes an interesting comment in this regard, suggesting that the upper abdominal pain of diabetic precoma may at times be on the basis of coronary closure. Edelmann [12] recalls that during the war there was a decrease in the incidence of diabetes and coronary closure, and that since then both have increased.

GLYCOSURIA DURING ACUTE PHASE OF CORONARY THROMBOSIS

The occurrence of glycosuria during the acute phase of coronary thrombosis has gradually become more widely recognized. In 1929 Levine,[2] discussing cases of coronary thrombosis which showed sugar in the urine during at least one stage of the disease, mentions that in one fourth of these patients the glycosuria was present only during the episode of acute closure. Two years later Cruickshank [13] described an interesting case of coronary thrombosis with extensive myocardial infarction in which the patient developed a hyperglycemia and glycosuria severe enough to require 40 units of insulin a day, and yet in spite of progressive cardiac failure the glycosuria and hyperglycemia entirely disappeared.

In an analysis of nine cases of coronary closure, Scherf [14] found one instance of long-standing diabetes, two which showed neither hyperglycemia nor glycosuria and six which revealed transitory glycosuria and hyperglycemia. Of the latter six cases, the first presented a blood sugar of 230 mg. and 0.5 per cent sugar in the urine on admission, but by the third day both the blood and the urine had returned to normal. A dextrose tolerance test performed on this patient gave normal results. His sixth case presented a very similar picture except that, although the fasting blood sugars were normal, a dextrose tolerance test revealed a high blood sugar even after two and one-half hours. No tolerance tests were performed on the other patients. Scherf was interested mainly in the diagnostic significance of this phenomenon, calling attention to the fact that the frequency of transient glycosuria in coronary thrombosis was even greater than Levine suggested.

Gottsegen [15] reported a case in which previous specimens of urine were always negative for sugar and after several weeks of anginal pains a definite coronary closure developed. At the onset of the thrombosis the urine showed small amounts of sugar and the fasting blood sugar was elevated. Gradually the glycosuria disappeared only to reappear with each attack of coronary thrombosis, of which this patient had several, and again to disappear completely during the free intervals. Edelmann,[12] corroborating the evidence of Levine and Scherf, found that of fifty-six cases of coronary closure twenty-three showed glycosuria, of which only twelve presented manifest diabetes. Eppinger,[16] discussing acute coronary closures, speaks of the not infrequent occurrence of glycosuria and hyperglycemia at the beginning of the attack.

11. Scherf, D., quoted by Edelmann.[12]
12. Edelmann, A.: Ueber die Bedeutung der Glykosurie und Hyperglykämie bei Erkrankungen der Koronararterien, Wien. klin. Wchnschr. **47**: 165 (Feb. 9) 1934.
13. Cruickshank, N.: Coronary Thrombosis and Myocardial Infarction, with Glycosuria, Brit. M. J. **1**: 618 (April 11) 1931.
14. Scherf, D.: Hyperglykämie und Glykosurie bei Coronarthrombose, Wien. klin. Wchnschr. **46**: 69 (Jan. 20) 1933.
15. Gottsegen, G.: Coronarthrombose und Diabetes, Arch. f. Verdauungskr. **53**: 36 (Jan.) 1933.
16. Eppinger, H.: Die Coronarthrombose, Wien. klin. Wchnschr. **47**: 210 (Feb. 16) 1934.

MEANING OF THIS GLYCOSURIA

What does this transient glycosuria in coronary closure represent? Levine [2] felt "that glycosuria is a common occurrence during the acute stage of coronary thrombosis, that it may be only transitory, and that it need not indicate any important diabetic state, . . . that it often proves to be a concomitant of the shock and terrific pain that exists with this condition." Cruickshank,[13] on the basis of the severe arteriosclerotic changes found in the pancreas in his case, believed that this underlying sclerosis was the important common factor. On the other hand, Scherf,[14] while he felt that sclerosis of the pancreatic vessel might heighten the degree of glycemia and glycosuria, believed that the blood pressure changes were of primary importance, pointing to the initial rise in blood pressure with the appearance of glycosuria and its disappearance with the subsequent fall in blood pressure. He did not regard the increased production of epinephrine or the fever resulting from the absorption of protein products as factors. However, he did agree that drugs which were administered, such as morphine, caffeine, theobromine with sodium salicylate, and epinephrine, could call forth a hyperglycemia. He felt that another factor of contributory importance might be the acute decrease in the minute output of the heart and the thereby resulting carbon dioxide overloading of the blood and tissues making for general tissue acidosis. Since Scherf had cases in which neither pain nor shock was present he was unable to agree with Levine's interpretation of the glycosuria.

Gottsegen [15] regarded these patients as potentially diabetic and thought that the high mortality of coronary thrombosis prevented these subjects from developing true diabetes. This author, discussing reflex stimulation of the adrenals and Roger's [17] theory of embolization to the cerebral arteries, regarded the duration and severity of the glycosuria and hyperglycemia as speaking against these mechanisms. He believed in a pancreatic origin, because in many cases a severe sclerotic change is found in the pancreatic arteries as part of a generalized arteriosclerosis, similar to Cruickshank's [13] case. He considered the transitory glycosuria the result of a reflex spasm of these already diseased vessels, the spasm resulting from the shock associated with coronary closure. He felt that when irreversible damage to the pancreas resulted there arose a chronic metabolic disturbance; i. e., diabetes mellitus.

Eppinger [16] felt that the absorption of the products of protein destruction is an important factor by favoring a pouring out of epinephrine. He did not regard pain as playing a part, since glycosuria is not seen in other conditions associated with pain.

Edelmann,[12] who often found a disturbance of carbohydrate metabolism in coronary disease, believed that the cardiac infarct resulting from an acute coronary closure led to the latent diabetes mellitus becoming manifest. He felt that diabetes not only causes sclerosis but also leads to thrombus formation, for at least one third of his diabetic patients showed absent peripheral leg pulsations, whether or not they gave evidence of intermittent claudication. While he admits other causative factors in coronary disease, he concludes that "the main thing seems to be a diabetic type of metabolism—not only in those with manifest diabetes but also apparently in those with latent diabetes." Analyz-

17. Roger, G. H., cited by Villaret, M.: Les hypertensions artérielles paroxystiques, Presse méd. **39**: 393 (March 18) 1931.

ing fifteen cases of coronary thrombosis, Edelmann found that seven were manifest diabetes, four gave typical diabetic blood sugar curves, and two others gave an abnormal dextrose tolerance response. Only two of the fifteen gave normal results during a sugar tolerance test. Edelmann, however, does not mention whether these observations were made during the acute phase or long after the closure. On the basis of latent diabetes Edelmann feels that the lowered blood pressure may lead to decreased circulation of blood through an already diseased pancreas, with the resulting decreased insulin production thus accounting at least in part for the hyperglycemia and glycosuria.

SUGAR TOLERANCE TESTS IN CORONARY THROMBOSIS

To gain insight into the meaning of this glycosuria during coronary closure, we undertook to study the carbohydrate tolerance in a group of patients who had coronary thrombosis. All gave evidence either clinically or electrocardiographically of having had a coronary closure, and in most instances both types of evidence were available. All cases in which there was a history of diabetes mellitus or which showed glycosuria at any time other than during the acute stage of coronary thrombosis were excluded. Our material consisted of twenty-one patients about evenly divided as to sex, ranging in age from 34 to 76 years, most of them being in the sixth decade of life. We have divided them into two large groups depending on whether or not they showed altered sugar tolerance, the first group permitting of several subdivisions. All tests on patients in the first group with three exceptions were performed within two weeks of their last coronary closure.

Abnormal: Group 1 (fifteen cases):

A. Four patients whose fasting blood sugar values were higher than the accepted normal and who may be considered as having true diabetes even though they failed to spill sugar in the urine. One of these cases may be questioned, since the blood sugar reached normal limits by the end of the test period.

B. Six patients with normal fasting blood sugars but with typical diabetic responses to the dextrose tolerance test.

C. Two instances in which the blood sugar after the administration of dextrose rose to an abnormal height but by the end of the test showed values that were very low. In one of these patients (B. G.) hypoglycemic symptoms developed after the third hour.

D. One instance in which the sugar tolerance curve stayed within normal limits during the peak of the curve but failed to reach a normal value by the end of the test.

E. One case in which the value at the end of one and three-quarters hours exceeded normal but in which the blood sugar attained normal by the end of the test period, and one instance in which a high value was reached at the end of three-quarters hour but in which no further blood specimens were collected.

Normal: Group 2:

Six patients with normal dextrose tolerance tests. Analysis of this group reveals two patients who had their coronary closure five years prior to the date of the dextrose tolerance test; one, three and a half years prior; one, two years prior; one in whom the date of his coronary closure was unknown, since he gave no positive history and showed only typical electrocardiographic changes of old coronary closure, and one in whom two months had elapsed since his coronary attack. This patient at the time of his coronary thrombosis had a fasting blood sugar of 140 mg.

Since there are included in this series of twenty-one cases only two instances of hypertension, two of obesity and one of mild hyperthyroidism, these factors need not be regarded as affecting our results.

COMMENT

Our investigation was undertaken with the purpose of determining the frequency of disturbed carbohydrate tolerance during the acute phase of coronary closure and to prove or disprove the existence of a latent diabetes in these cases. If these individuals possess a basic decreased carbohydrate tolerance, as Edelmann believes, we feel correct in assuming that this diminished tolerance would persist long after the acute effects of the coronary closure have disappeared.

Of the twenty-one patients investigated, 71 per cent gave evidence of abnormal sugar tolerance; but when we consider only those twelve cases which were examined within two weeks of their coronary closure, we find an abnormal sugar response in every instance. And, further, when it is remembered that all known cases of diabetes were excluded from this series, it

Results of Tests

Group	Name[b]	Age	Sex	Fasting	Sugar Tolerance Test[a] ¾ Hr.	1¾ Hr.	2¾ Hr.	Glycosuria[c]
1 A	A. B.[d]	60	♀	182				
	T. S.	68	♀	173	251	210	203	None
	E. B.	67	♀	156	241	166	95	None
	I. M.	76	♀	134	236	250	310	None
1 B	J. M.	70	♂	137[e]	195	294	254	None
	I. W.	59	♂	104	310	414	176	Present
	F. R.[f]	45	♀	92	160	149	200	None
	S. S.[g]	68	♀	96	166	176	204	Present
	M. M.	70	♀	113[h]	161	195	148	None
	C. D.	65	♂	114[i]	180	123	156	Present
1 C	B. G.	34	♂	103	212	...	56	Present
	H. C.	62	♂	104	155	200	85	Present
1 D	H. P.	44	♂	105[i]	153	147	153	None
1 E	V. G.[f]	44	♂	68	151	200	107	None
	P. G.[d]	63	♀	95	217[j]	...	...	None
II	N. G.	62	♂	110[k]	151	141	133	None
	P. B.	53	♂	108[l]	151	75	99	None
	M. S.	60	♀	103[l]	118	121	105	None
	R. S.[d]	60	♀	109[m]	129	...	96	None
	I. R.	65	♂	129[n]	158	140	127	None
	S. H.	63	♂	88[o]	131	110	97	Present

a. Folin-Wu method, normal values: Fasting blood sugar of under 130 mg. which after ingestion of 100 Gm. of dextrose stays below 180 mg. and reaches normal by the end of two and three-fourths hours.
b. Tests were performed within two weeks of coronary closure unless otherwise noted.
c. Glycosuria during sugar tolerance test.
d. Hypertensive.
e. Fasting blood sugar prior to day of test was 105 mg.
f. Obese.
g. Mild hyperthyroid.
h. Three months since coronary closure.
i. Four years since coronary closure.
j. Only 50 Gm. of dextrose given.
k. No history of coronary closure but positive electrocardiographic tracings.
l. Five years since coronary closure.
m. Twenty-two months since coronary closure.
n. Two months since coronary closure, fasting blood sugar at time of coronary closure 140 mg.
o. Three and a half years since coronary closure.

becomes evident that soon after the occurrence of a coronary closure the finding of an abnormal sugar tolerance curve is the rule. Of the nine cases in which a significant interval existed between the time of coronary closure and the dextrose tolerance test, only three gave an abnormal response. That 67 per cent normal curves were found in this group in which an interval was permitted to elapse, while universally abnormal curves existed in the acute group, would argue against the existence of a latent diabetes as the predominant factor and speak for a temporary mechanism.

We believe that a disturbance involving the vegetative nervous centers of the brain, as has also been suggested by Hausner and Hoff,[18] is the important factor. The transient nature of the disturbed carbohydrate

18. Hausner, E., and Hoff, H.: Zur Pathogenese des Angstgefühls im Angina-pectoris-Anfall, Ztschr. f. klin. Med. **125**: 493, 1933.

tolerance and its occurrence in cases in which neither pain nor shock was prominent would be consistent with this explanation. The appearance of glycosuria in numerous types of brain disorders, such as concussion, hemorrhage and tumor, would lend support to this belief. In this connection, mention should be made of Hausner and Hoff's [18] finding an edema of the medulla and lower pons in patients with coronary closure dying early in their attack. These investigators were able to produce the same type of brain edema in the majority of their ligations of the coronary arteries in dogs. The careful observation of cases of coronary thrombosis for medullary manifestations, and the correlation of these changes with the results of studies of the carbohydrate metabolism, may offer important evidence on this point.

A detailed discussion of the importance of the finding of a diminished sugar tolerance during coronary closure would lead too far afield and must be left for a future time. However, one cannot help but note some of the clinical implications. Insulin has been shown to be a drug that must be used with the greatest care in coronary closure.[19] It is therefore most important to realize the existence of an underlying altered carbohydrate metabolism in these cases and to differentiate carefully coronary thrombosis with transient hyperglycemia and glycosuria from coronary closure and true diabetic acidosis, and from diabetic acidosis with electrocardiographic changes.[20] As Scherf [14] has pointed out, the question of a true diabetes mellitus cannot always be settled with certainty at the time of the attack of coronary thrombosis. Easily understood are instances in which diabetic patients went into coma at the onset of coronary closure,[21] as well as the marked improvement in their diabetic status toward the end of their attack.[22] Our study reemphasizes the importance of doing blood sugar estimations when the urine is negative for sugar. The importance of finding the presence of true diabetes is brought out by Root and Graybiel.[10] They found that the prognosis of angina pectoris is worse in the diabetic patient and that those diabetic patients who died in the first year of their angina had received very inadequate treatment for their diabetes.

SUMMARY AND CONCLUSIONS

1. Glycosuria and hyperglycemia often occur during the acute stage of coronary thrombosis not preceded by diabetes.

2. In an effort to evaluate the influence of latent diabetes on this glycosuria and hyperglycemia, sugar tolerance tests were done in a series of nondiabetic cases of coronary thrombosis. All the recent cases of coronary thrombosis gave an abnormal response to the sugar tolerance test. Sixty-seven per cent of the cases of old coronary closure gave normal sugar tolerance curves. We therefore believe that the glycosuria and hyperglycemia of the acute stage of coronary thrombosis is not dependent on a latent diabetes.

3. A disturbance in the vegetative centers of the brain is offered as an explanation for the transient nature of the glycosuria, hyperglycemia and abnormal sugar tolerance.

651 St. Marks Avenue.

19. Parsonnet, A. E., and Hyman, A. S.: Insulin Angina, Ann. Int. Med. **4**: 1247 (April) 1931.
20. Barnes, A. R.: Electrocardiogram in Myocardial Infarction, Arch. Int. Med. **55**: 457 (March) 1935.
21. Lepehne, G.: Zur Frage der Koronarthrombose, Med. Klin. **30**: 1589 (Nov. 30) 1934.
22. Ornstein, P.: Ueber einen Fall von Koronarverschluss mit folgendem Praekoma diabeticum, Med. Klin. **29**: 427 (March 24) 1933. Scherf.[14]

SELF-PERFORMED OPERATIONS

WITH REPORT OF A UNIQUE CASE

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Wounds self inflicted in suicidal attempts, and self mutilations by the obviously insane, the religious fanatics, the malingerers and the professional beggars of certain countries, are too well known to merit comment. When these are excluded, there remains a group of individuals known to have subjected themselves to their own surgery for therapeutic reasons, either actually or supposedly indicated. Recorded cases of this type would seem to fall into one of perhaps four major groups:

1. Surgeons who have operated on themselves.
2. Normal minded individuals who have been forced by severe pain or in the absence of medical attention to perform autosurgery.
3. The sexual perverts and those suffering from an acute psychosis, intense sexual excitement, or anger resulting in self-inflicted mutilations or amputations, usually of the genitalia.
4. Those who, because of utter ignorance or feebleminded-ness, have attempted the surgical correction of some obvious disease or abnormality.

GROUP 1

One of the first recorded cases in which a physician operated on himself was that of the well known Paris surgeon Reclus,[1] who in 1890 removed a tuberculous lesion of a finger of his right hand and curetted the wound, using cocaine for a local anesthetic. Reclus reported two other cases, a physician who removed his own ingrown great toe nails, and a Turkish surgeon, Mehmed-Said, who resected his own scrotum for a large varicocele.

Gille [2] in 1933 collected several cases of professional autosurgery from the literature. These included a herniotomy under local anesthesia by a Rumanian surgeon, Fzaicou, in 1909; a similar operation by a Frenchman, Regnauld, in 1912, and appendectomies by two Americans, Alden and Kane. In "Anomalies and Curiosities of Medicine," Gould and Pyle [3] mention a French surgeon, M. Clever (?) de Maldigny, who removed a calculus from his own bladder, aided by a mirror. Probably several more similar cases have occurred. Regardless of any difference of opinion as to what might constitute the indications for a surgeon to remove his own appendix, it should be noted that in the foregoing cases no question was apparently raised as to the sanity of the patients.

GROUP 2

Numerous references can be found to accounts of rational individuals who, driven to desperation by pain, or in the absence of medical attention, have performed autosurgery. Cesarean section by the patient herself because of intolerable pain was reported by Cowley,[4] and other cases have been described.[5] Self-performed cystotomy and lithotomy because of severe pain are

From the Surgical Service, Cook County Hospital.

1. Reclus, P.: Local Anesthesia and Surgeons Who Operate on Themselves, Presse méd., Aug. 17, 1912.
2. Gille, M.: Autosurgery, Echo méd. du nord **37**: 45, 1933.
3. Gould, G. M., and Pyle, C. A.: Anomalies and Curiosities of Medicine, Philadelphia, W. B. Saunders Company, 1901, p. 708.
4. Cowley, Thomas: London M. J. **6**: 366, 1785.
5. Gould and Pyle: Anomalies and Curiosities of Medicine, p. 132.

known to have occurred,[6] and Patterson[7] described a Scotchman who repeatedly applied the actual cautery to his skin for relief of severe pain from hip-joint disease. Explorers and soldiers have also reported minor amputations and other surgery of necessity that was self performed because medical care was not available. Such cases are of course rare in the twentieth century.

GROUP 3

Sexual perversion is a psychopathic state, and undue meditation over the generative function has resulted on numerous occasions in self mutilation. Gerty[8] has seen two patients with self-performed orchidectomies, both of whom were insane. Bradley[9] reported the case of a man who was sexually hyperactive and a masturbator. At the age of 40 he removed both his testicles and a few years later amputated half his penis. The older literature contains records of many similar cases.[10]

Atypical forms of encephalitis may give rise to localized pain with delirium such as that described by Pardee[11] and Bassoe[12] and illustrated by Conn's case[13] in which a girl of 21 performed self mutilation of her hand. Illustrations of self mutilation by patients with various types of encephalitis have been reported recently,[14] and possibly many of the earlier cases were examples of the effects of a similar but overlooked form of a cerebral pathologic condition.

Another group of self castrations and mutilations have occurred in individuals who were probably sexual perverts, but this could not be definitely proved. Jeanselme and Schulmann[15] report the case of a boy, aged 12 years, who produced total necrosis of the glans penis, probably by wrapping threads around the organ, a known form of masturbation. Batzdorff[16] described the case of a man, aged 55, who suffered from urethral stricture. He amputated the penis and then removed both testicles through a second incision, afterward suturing the wounds. The patient put the blame for this deed on a fit of anger, but, because of the secondary castration and the patient's feminine appearance, the author believed him to be suffering from a sexual aberration.

Of greater interest are those cases of self mutilation resulting from temporary emotional upheavals in normally rational individuals. Most of the recorded cases of this nature are the results of intemperance or of anger at being impotent. Gould and Pyle[17] mention several examples of the former. An excellent example of this type is a case studied by Dr. J. J. Kearns,[18] coroner's pathologist at the Cook County Hospital, who kindly supplied the following information:

A healthy man, aged 46, accumulated some money and came to the city on a long anticipated vacation. He spent the evening drinking in the company of a prostitute and was quite intoxicated when he retired with her. For almost an hour he was unable to obtain an erection, whereupon the woman departed. Shortly thereafter erection occurred. Intoxicated and disgusted, he seized a razor and with two strokes completely amputated the penis, both testicles and most of the scrotum. He died of the effects of hemorrhage several hours after his removal to a hospital. Nothing in his history or physical condition would indicate any insanity or sexual aberration.

GROUP 4

Major autosurgery performed by the ignorant or feebleminded individual for the cure of some obvious disorder is rarely encountered. The following case concerns one such person who twice subjected himself to major surgery with eventual recovery:

A man, aged 49, a Czechoslovakian, was admitted to the Cook County Hospital at 7 p. m., Aug. 29, 1935, suffering from a self-inflicted wound in the right inguinal region through which was protruding one end of the severed small intestine.

He was operated on shortly after, local anesthesia of 1 per cent procaine hydrochloride being used. Examination disclosed

Fig. 1.—Infected inguinal wound nine days after self-performed bowel resection. This also shows the old self-performed castration scar of the scrotum at the base of the penis and the absence of the right testicle.

an irregular ragged incision about 9 cm. long parallel with and above the inguinal canal, starting about 2 cm. from the root of the penis. The fibers of the external oblique muscle were cut in their long axis, and there was an opening about 3 cm. in diameter into the peritoneal cavity. An open loop of injected and edematous small intestine protruded from the wound from right to left. The mesentery was torn for a distance of about 6 cm. upward and to the left. By following this tear the other end of the intestine was found in the abdomen. It was slightly injected but not edematous and not discharging intestinal contents. Its open end could barely be brought out of the wound, and traction on it caused pain and vomiting. These observations and the appearance of the mucosa convinced us that the part of the intestine was the upper part of the jejunum, probably not more than 6 or 8 inches (15 or 20 cm.) from its origin. The peritoneum at the site of the incision was thick, tough and somewhat scarred, as if it were part of a hernial sac, but no true sac could be identified. About half an ounce of intestinal contents resembling undigested vegetable greens contaminated the wound, but there was none found in the abdomen. The spermatic cord was not seen. Both ends of the intestine were ragged where they had been severed but showed no evidence of scarring or constriction.

The operative procedure was as follows: The wound and both ends of the intestine were cleansed and debrided some-

6. Gille.[2] Gould and Pyle: Anomalies and Curiosities of Medicine, p. 708.
7. Patterson: Glasgow M. J. **1**: 408, 1889.
8. Gerty, F. J.: Personal communication to the authors.
9. Bradley, J. M.: A Case of a Self-Made Eunuch, Bull. St. Louis M. Soc. **28**: 133, 1933.
10. Courtney, J. E.: Two Cases of Self Castration, M. Rec. **58**: 396, 1900. Mummery, A. E. A.: Self Castration, J. A. M. A. **50**: 281 (Jan. 25) 1908. Wolfe, J. M.: Attempt at Self Castration, ibid. **49**: 41 (July 6) 1907. Gould and Pyle: Anomalies and Curiosities of Medicine, p. 732.
11. Pardee, I. H.: An Acute Descending Radicular Type of Epidemic Encephalitis, Arch. Neurol. & Psychiat. **4**: 24 (July) 1920.
12. Bassoe, Peter: The Delirious and the Meningoradicular Types of Epidemic Encephaltiis, J. A. M. A. **74**: 1009 (April 10) 1920.
13. Conn, J. H.: Self Mutilation in Case with Dorsal Root Syndrome, J. Nerv. & Ment. Dis. **75**: 251 (March) 1932.
14. Goodhart, S. P., and Savitsky, N.: Self Mutilation in Chronic Encephalitis, Am. J. M. Sc. **185**: 674 (May) 1933. Emma, M.: Self Mutilation Pathogenesis, Arch. di anthropol. crim. **52**: 203 (March-June) 1932.
15. Jeanselme, E., and Schulmann, E.: Case of Automutilation in a Boy 12 Years old, Encéphale **1**: 310 (June) 1921.
16. Batzdorff, E.: Total Self Emasculation, Beitr. z. klin. Chir. **139**: 205, 1927.
17. Gould and Pyle: Anomalies and Curiosities of Medicine, p. 734.
18. Kearns, J. J.: Personal communication to the authors.

what. The mesenteric tear was freed from adherent clots and then closed with catgut. The intestine was rejoined by an end-to-end anastomosis, a double row of catgut being used with a few linen tension sutures. The peritoneum was closed tight with catgut, and interrupted catgut sutures were used to close the external oblique fascia. Silkworm-gut apposed the skin edges, and drains were inserted into the subcutaneous space and into the inguinal canal.

The postoperative course was satisfactory. A liquid diet was given on the fifth day and a soft diet on the seventh. A superficial wound infection developed with some fever, but at no time was there abdominal distention, vomiting, evidences of obstruction, or peritonitis. At the end of three weeks the wound was completely healed, the patient was eating a regular full diet, and the bowels were moving regularly.

Figure 1 shows the wound nine days after operation, at which time the superficial infection was most marked. It also shows the scrotal scar from the previous operation and the absence of the right testicle.

Although the patient had been in this country twenty-one years, he spoke English poorly and the complete history was later obtained from the patient and from other sources. About two months before admission he suffered from swelling and pain of the right testicle. We could not discover any cause for this. Three friends had had abdominal operations and had minimized their seriousness. At one time he worked as a janitor for a surgeon, and he had also seen animals castrated. Being unable to pay a surgeon's fee, he performed a right orchidectomy on himself, using a pocketknife which he had

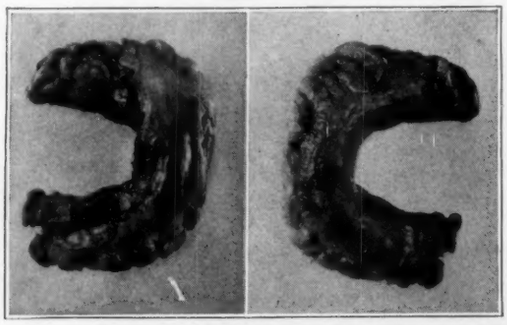

Fig. 2.—The 11.5 cm. loop of jejunum self removed by the patient shown in figure 1.

cleaned and sharpened. He insisted that his only reason for doing so was the conviction that an operation was necessary, for which he was unable to pay. He was unaware that charity service was available. The scrotal operation was quite painful, but there was no excessive bleeding and he made no attempt to suture the wound or seek medical care. It healed slowly and was still incompletely healed at one end when first examined by us.

For several months he had also suffered from a right direct (?) inguinal hernia for which he was once examined by a physician, who advised him to wear a truss.

The morning of August 29, the hernia was causing an aching pain. Encouraged by his previous success, he again operated, making the incision described and apparently opening the sac of a direct hernia. He pulled out a loop of intestine and, finding an area that looked "rotten," cut it off. He returned to bed but arose later and walked about 2 miles to the office of Dr. Norbert Leckband, who ligated two bleeding vessels and sent him by ambulance to the Cook County Hospital, where the operation described was performed about eleven hours after the injury.

Dr. Leckband inspected the patient's home and found much blood in the kitchen and on the bed. He also found the resected loop of intestine (fig. 2), which he kindly delivered to us. It consisted of a segment of upper small intestine (jejunum), which after fixation in formaldehyde measured 11.5 cm. (about 4½ inches) in length. There were small hematomas in the serosal coat, but both gross and microscopic examinations revealed no chronic lesion or evidence of incarceration or strangulation.

September 19 the patient was transferred from the surgical service to the Psychopathic Hospital, where he was studied for one month. Stanford-Binet mental tests resulted in his being given an intelligence quotient of 41.5 and a mental age of 6 years 8 months. This would classify him as a high grade imbecile or a low grade mental defective. His basal age was 4 years, although he passed five tests at year 5, three tests at year 6, five tests at year 7, two tests at year 8, and one test at year 9. He was cooperative, attentive and polite. His employer was interviewed and reported that he had worked in a greenhouse and nursery for fifteen years, living in a small house on the property. He was a good worker and dependable, took good care of his living quarters and prepared his own meals. He drank occasionally but never became noisy or troublesome. His employer and neighbors regarded him as a simple minded individual but not insane. He had a wife and two children in Czechoslovakia and was on a list of aliens to be deported. His employer was perfectly willing to have him return, and the patient was discharged to be under his observation. Comments and diagnoses by the attending staff of the Psychopathic Hospital on the patient were as follows:

Dr. Clarence Neymann: "Mental defective, not committable; a grand example of what a primitive mind will do under certain circumstances." Dr. Morris Braude: "Probably feebleminded by our standards, but not by his own—not committable." Dr. Ralph Hamill: "Mental defective, as good as any." Dr. Francis J. Gerty: "Feebleminded, not committable."

COMMENT

This case would seem to be unique in medical annals, as none other quite like it has been recorded to our knowledge. One somewhat similar, but probably belonging in group 3, was described by Osinga,[19] who examined the body of a Javanese boy, aged 13 years, who had cut open a scrotal hernia and resected two portions of small intestine. The boy was apparently normal mentally until a scrotal hernia developed, which caused mental disturbances because of his fear that he would not "attain manhood." It was during a period of depression that he operated on himself with a penknife. His cries brought relatives, who carried him to a distant hospital, but he died on the way of hemorrhage, about four hours after the mutilation.

The case here reported would seem to be an outstanding example of group 4 previously mentioned. The patient had no demonstrable psychosis or sexual perversion. His self-performed operations were undertaken for what seemed, to his simple mind, to be good reasons. The case is also remarkable in that the patient completely recovered after two separate self-performed major operations, castration and bowel resection, the former without any medical attention and the latter with surgical anastomosis eleven hours after the injury.

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19. Osinga, D.: Case of Self Operation (Bowel Resection), Geneesk. tijdschr. v. Nederl.-Indië **72**: 1540 (Oct. 25) 1932.

Loss of Appetite and Vitamin B.—In cases of severe deprivation of vitamin B the loss of appetite becomes a serious matter. In fact the condition of vitamin B deficiency is very largely one of starvation from loss of interest in food. Often the lost appetite has been restored with dramatic promptness upon giving vitamin B either in the form of a natural food or of a concentrate. It is a true effect upon appetite as a function of the body and not merely a matter of making the food appetizing; for when the vitamin is given separately the experimental animal will return with appetite to the same food which it had previously refused. To what extent it is feasible and desirable to stimulate the appetites of patients by administration of artificial concentrates of vitamin B is a problem for the physician.—Sherman, H. C.: Food and Health, New York, Macmillan Company, 1934.

PERMANENT PIGMENTATION FOLLOWING APPLICATION OF IRON SALTS

FOR THE TREATMENT OF IVY POISONING

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In 1873 White [1] first called attention to the use of iron salts in the treatment of ivy poisoning. In 1886 Browning [2] described the use of ferric chloride in the treatment of rhus poisoning, but its popularity was greatly advanced by the work of McNair [3] in 1921.

Fig. 1.—Front view of patient, showing one of the largest solid areas of pigmentation.

Many others [4] have attested the usefulness, harmlessness and efficacy of preparations of iron salts in both the treatment and the prophylaxis of rhus poisoning; some authors have gone so far as to suggest the remedy as the first choice in the chemotherapy of rhus dermatitis.

The prevalence of rhus poisoning and the apparent rarity of complications in cases treated by iron salts prompts the report of these with their unusual sequelae.

REPORT OF CASES

CASE 1.—Miss M. F.,[5] an American, aged 46, a writer, presented herself for consultation to one of us (J. S. T.), Sept. 10, 1935, with evidence of an asymmetrical, bilateral and irregular group of pigmented lesions, located on the face, neck, upper part of the chest, and forearms. The lesions were fairly circumscribed, uniform, smooth and slightly depressed, varying from 1 to 2 mm. in diameter, and one large lesion on the left side of the upper lip measured 3 by 4 cm. The lesions varied from a light brown to a deep copper color. They showed no evidence of infiltration and were noninflammatory. No subjective symptoms were present.

Aug. 14, 1935, the patient was exposed to various leaves and grasses in a wooded section of the country. When she sat down to rest she noticed "hivelike lesions" on the left forearm, preceded by needle-like pains. The next morning she noticed a "cluster of red spots" on the left side of the neck and over the left side of the upper lip. A calamine ointment was then applied until the next day, when her face and neck began to swell. August 16, wet dressings of a ferrous sulfate solution were prescribed and applied to the lesions for twenty-four hours, without relief of symptoms. This was discontinued and wet dressings of a 5 per cent solution of ferric chloride in a half and half mixture of alcohol and water were ordered, and she was also advised to puncture the vesicles that had formed in the interim. After applying the ferric chloride solution to the lesions, which now were denuded of epidermis, the patient states that her skin took on the appearance of a "colored person," with a diffuse discoloration and pigmentation of the affected parts. The use of this solution was then discontinued and a calamine lotion used until the acute stage had completely, subsided, leaving the pigmentation described.

With a punch biopsy instrument a small piece of tissue was removed from a pigmented area on the left forearm. The histopathologic report on this tissue was as follows:

There was a slight edematous vacuolization of many of the prickle cells and a moderate edema and dilatation of the blood vessels of the upper corium. The inflammatory response was slight. A large number of chromatophores was to be found about the blood vessels and between the collagen fibers of the upper corium. Perl's stain showed blue granules in the chromatophores. The diagnosis was dermatitis with deep seated pigmentation.[6]

The remaining laboratory studies were essentially negative. A blood count revealed: platelets, 310,000; hemoglobin, 85 per cent; grains of hemoglobin, 12 grains per hundred cubic centimeters; total red blood cells, 4,000,000; total white blood cells, 7,000; differential count: lymphocytes, 45 per cent; polymorphonuclear leukocytes, mature, 52 per cent; monocytes, 1 per cent; eosinophils, 2 per cent, and basophils, 0 per cent. The red blood cells appeared normal.

The temperature was 98 F.; the bleeding time, one and one-half minutes; coagulation time, four minutes; the tourniquet test, negative; the blood culture, negative after two weeks, and the sedimentation time, fifteen minutes in one hour (slightly above the normal rate). The fragility test showed that hemolysis began at 0.4 per cent and was complete at 0.375 per cent (normal).

Fig. 2.—Lateral view, showing punctate spots of pigmentation marking sites of previous vesicular eruption.

CASE 2.—Mrs. L. S., aged 38, a housewife, born in the United States, was seen privately in September 1925 by one of us (E. F. T.) because of a pigmentation of the skin of the face,

From the Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital, Columbia University.

1. White, J. C.: On the Action of Rhus Venenata and Rhus Toxicodendron upon the Human Skin, New York M. J. **17**: 225-249, 1873.
2. Browning, A. G.: M. Rec. **30**: 222, 1886.
3. McNair, J. B.: A Contribution to the Chemotherapy of Rhus Dermatitis and Tentative Method for Treatment, Arch. Dermat. & Syph. **3**: 802-808 (June) 1921.
4. These include:
Clock, R. O.: Treatment of Rhus Dermatitis with Poison Ivy Extract, J. M. Sc., New Jersey **22**: 344-349 (Sept.) 1925.
McNair, J. B.: Poison Ivy, Botany Leaflet 12, Field Museum of Natural History, 1926.
Wood, H. C., Jr.: Sumac and Poison Ivy, Philadelphia College of Pharmacy & Science **6**: 1927-1928.
Loeser, D.: The Colloidal Nature of Iron Scale Salts, J. Am. Pharmaceutical A. **18**: (Feb.) 1929.
Byram, A. T.: Poison Ivy Control, Canad. Pub. Health J. **22**: 291-292 (June) 1931.
Ivy Poisoning and Lobinol, Queries and Minor Notes, J. A. M. A. **97**: 341 (Aug. 1) 1931.
Iron Chloride Solution is Good Treatment for Poison Ivy, Hygeia **10**: 767 (Aug.) 1932.
5. Presented before the New York Dermatological Society by Dr. E. F. Traub in October 1935.
6. From the Pathological Laboratory of the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital. (Else A. Barthel, M.D., and Elinor Whitney, A.B., M.S.).

neck and arms following treatment for a dermatitis venenata (ivy) with iron salts. The patient stated that her family physician had treated her early in August of that year for a typical attack of ivy poisoning, using a 5 per cent solution of ferric chloride in 50 per cent alcohol. The areas of pigmentation, which occurred rather extensively on the locations mentioned, failed to disappear when the skin was peeled, for which strong doses of ultraviolet rays were used. More radical measures were not undertaken because of the danger of permanent scar formation. The pigmentation was permanent.

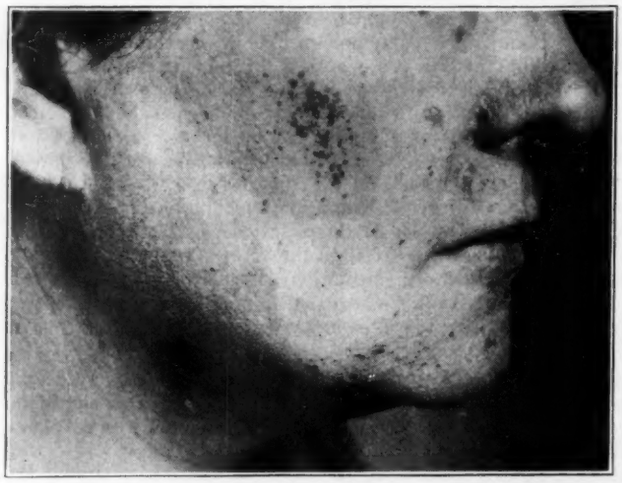

Fig. 3.—Lateral view, showing punctate spots of pigmentation marking sites of previous vesicular eruption.

Through the courtesy of Dr. George Miller MacKee [7] we are privileged to report briefly four additional cases of pigmentation that came under his observation about fifteen years ago, shortly after the published account of good results in ivy poisoning with the use of the iron salts. He was careful to note that in each instance there had been a severe dermatitis venenata caused by Rhus toxicodendron. In each case the eruption was acutely vesicular and exudative in areas. It was his impression that the resultant pigmentation, which was apparently permanent, occurred only in the areas that were eroded at the time the iron preparation was applied as a wet compress.

COMMENT

McNair [8] believes that part of the remedial value of iron chloride in rhus dermatitis may be due to its ability to form a layer of precipitated and denatured protein on the injured surface, which acts as a protection against the penetration of the poison. He also states that the coagulation effect on protein and the irritant properties of iron chloride cause the lesions to become slightly depressed and darkly colored but result in no scarring of itself. The possibility of the ferric chloride penetrating the tissues and becoming fixed by them has apparently never before been reported. The course of events in these cases apparently is similar to the production of tattoo marks. Although there was some slight difference in the intensity and color of the pigmentation in the different cases, a rather deep golden brown pigmentation seemed to be the striking and characteristic feature in all of them. The pigmentation was exceedingly conspicuous and disfiguring, and as the lesions were to be found chiefly on the exposed parts of the body, that is, the face, neck and arms, the cosmetic defect was a serious one. The deep location of the pigment, between the collagen fibers of the upper corium (case 1), indicates that little spontaneous improvement is to be expected and practically assures the permanence of the lesions. Furthermore, the widespread distribution of the lesions, especially those involving the face and neck, precludes any attempt at removal without the great risk of leaving undue and unpleasant scarring. The fact that it is possible for such accidents to happen at all makes one hesitate to advocate the indiscriminate and widespread use of this type of treatment for a disorder that is usually easily controlled by other remedies entirely devoid of the danger of sequelae. The use of iron salts to be applied as a lotion, compress or wet dressing in any vesicular, bullous or exudative dermatoses should be discouraged, because the accident could occur equally well in the treatment of eruptions other than from poison ivy.

7. MacKee, G. M.: Personal communication to the authors.
8. McNair, J. B.: Rhus Poisoning, University of Chicago Press, 1923.

CONCLUSION

1. Unusual sequelae have occurred in cases of rhus dermatitis treated with iron salts.
2. There have been cases of widespread permanent pigmentation as a result of the treatment.
3. The medical profession is made aware of the fact that ferric chloride is not as harmless as it has been led to expect.

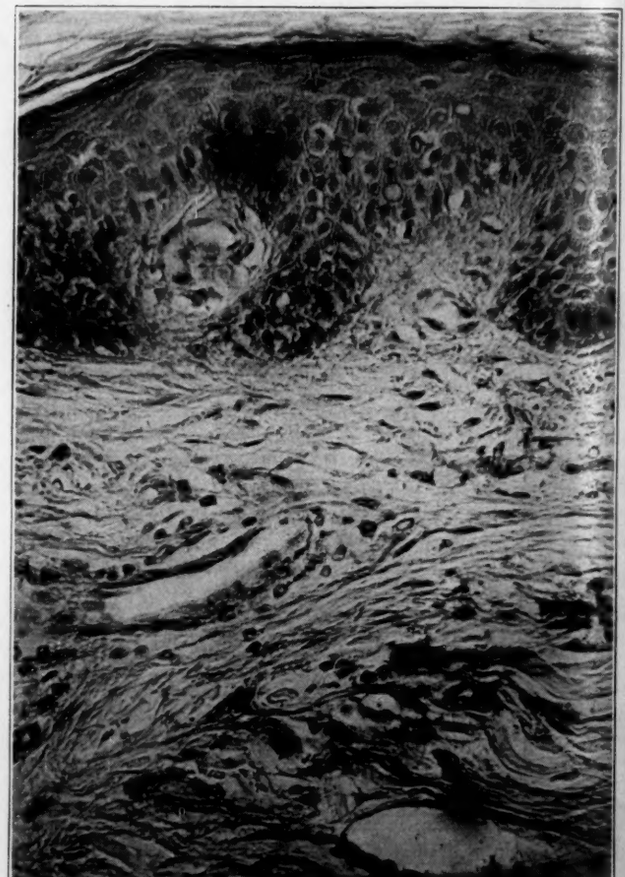

Fig. 4.—Section of skin removed from one of the pigmented areas, showing the deposit of pigment both deep in the epidermis and in the upper corium.

4. Examples of the kind herewith reported are probably comparatively rare.
5. It has been demonstrated that the pigment was deposited around the blood vessels and between the collagen fibers of the upper corium.
6. The use of iron salts applied as a lotion, compress or wet dressing should be discouraged in all vesicular, bullous and exudative dermatoses.

140 East Fifty-Fourth Street—65 South Street.

A TWENTY-FIVE-YEAR-OLD ERROR IN MEASURING A GIANT

CHARLES D. HUMBERD, M.D.

BARNARD, MO.

The case of modern giantism which is most frequently cited is that of John Turner, aged 36, the former driver of a brick-wagon, who is item 32 (surgical No. 25947) in Dr. Harvey Cushing's monograph.[1] Numerous essayists have pointed to this record as that of an outstanding specimen among the "tall boys," so he has become a rather permanent fixture in the literature on giants. Original references to Turner's case can be found nowhere else in print, however, although his personal history here states that "of late . . . he has been an inmate in various hospitals." Dr. Cushing records that this giant's height, measured after death, was 8 feet 3 inches (251.5 cm.). I am convinced that this measurement was in error by at least 1 foot, perhaps more, for the reasons which follow.

Cushing's text presents two good full length photographs of the nude and barefooted giant, as figure 220 on page 163 and figure 224 on page 166. An inspection alone shows that this patient's elongation was quite apparently that of the infantilism-eunuchoid, non-acromegalic type. To one who has studied circus giants and applied a tapeline to them it is evident from these photographs that Turner, though he was huge, was far short of 8 feet in height. In the write up of the physical examination the doctor states that "his height is estimated at about 8 feet." It is known that the eye always overestimates the exact height of giants—exhibition giants take advantage of the public's credulity, for it is axiomatic that no giant (or no dwarf) ever told the truth about his dimensions! The majority of them, too, customarily do a bit of tinseled falsifying anent the number and the size of their immediate relatives.

Several assorted measurements of Turner are available in the text on page 166:

A. Each of his clavicles was 21 cm. in length.

B. The arm measured 110 cm. from the acromion to the fingertip. But because the fingers in both photographs are flexed this dimension cannot be used. However, the length from the base of the median metacarpal to the tip of the middle finger was 27 cm. By difference, this leaves an acromion-metacarpal length of 83 cm.

C. The humerus measured 47 cm. from its tuberosity to the external condyle.

D. The radius was 37.5 cm. in length. (Note: C + D, or 47 + 37.5, = 84.5 cm.; compare measurement B, which is given as 83 cm.).

E. The length of the flexed middle finger from knuckle to tip was 17 cm. (Note that the roentgenogram, figure 225, is stated to be natural size, but on it this finger measures at most only a scant 15 cm.; this measurement has been checked against three different copies of the plate, to discount any error from paper shrinkage. On this plate the length of the index finger is to that of the middle finger as 132 mm. : 144 mm., or as 11 : 12. So the index finger, which can be nicely measured as extended in figure 220, was 15.5 cm. long.)

F. The femur measured 62 cm. from the great trochanter to the knee joint.

Other measurements of Turner can be extracted from the account as follows:

Occipitofrontal circumference of the head, 61 cm.
Width of shoulders, between tips of the acromions, 36 cm.
Scapular spines, 20 cm., and vertical length of the scapulae, 25 cm.
Circumference of the middle finger at the first joint, 10 cm. The nail on this finger was 2.3 cm. long.
Circumference of the pelvis, 109.5 cm.
Circumference of the left knee, 58.5 cm.
Circumference of the ankle, 48.5 cm.
Circumference of the great toe, 13.5 cm.
Measurements of the sella turcica, 2.2 by 2.7 cm.
Total weight of body, 275 pounds (124.8 Kg.).

Individual organs had the following weights: brain, 1,884 Gm.; heart, 520 Gm.; pancreas, 70 Gm.; spleen, 1,000 Gm.; kidneys, 700 Gm., and testes, 15 Gm.

When figure 220 is studied carefully it will be noted that the giant is stooped, though his head is erect. If

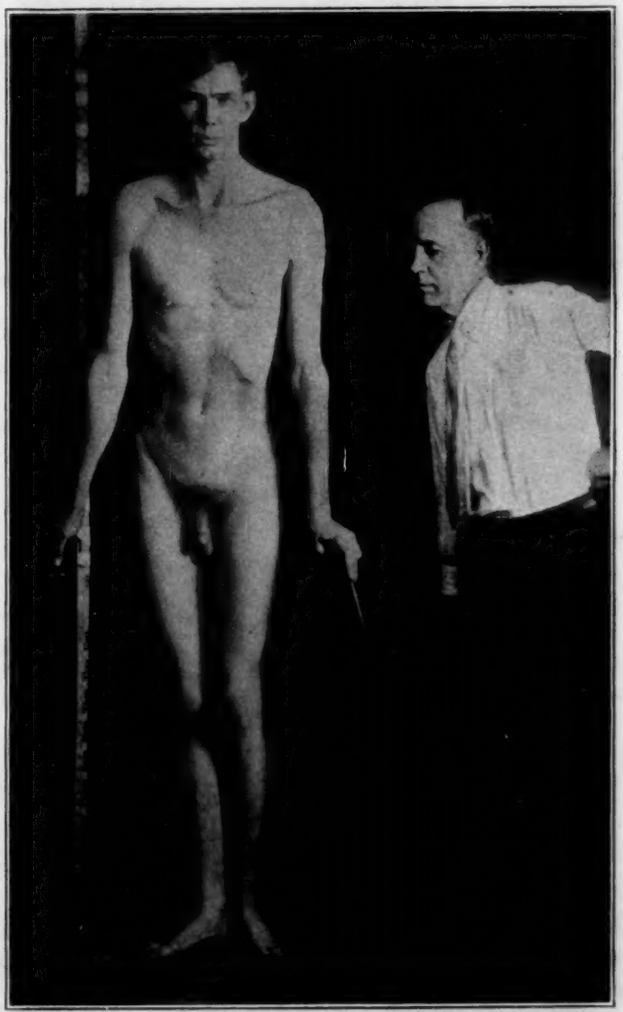

Fig. 1.—Reproduction of photograph especially posed in counterfeit of Cushing's figure 220. The newspaper editor on the right has the same height as Dr. Crowe, 5 feet 8 inches (173 cm.). The "giant" is 21 years old, weighs 180 pounds (81.6 Kg.) and is 6 feet 7 inches (201 cm.) tall; his face somewhat resembles Turner's and might suggest an infantilism type of gigantism, but he has none of the stigmas of this disorder. It will be noted, however, that he appears to be almost as tall as "8 feet 3 inches" (Turner).

a pair of dividers is used to take off the dimensions in this photograph, and the points of the instrument are then measured against a scale, the results will be as follows:

The giant's height in this illustration is 152 mm.
A. Each clavicle here measures 16 mm.
B. The acromion-metacarpal length is 65 mm.
C. The humeri are each 32 mm. long.
D. The radii are each 29 mm.
E. The left index finger is 12 mm.
F. The femur is 48 mm.

1. Cushing, Harvey: The Pituitary Body and Its Disorders, Philadelphia, J. B. Lippincott Company, 1912, pp. 162-170.

Solving each of these proportions gives:

A. 16 mm. : 21 cm. :: 152 mm. : 199 cm.
B. 65 mm. : 83 cm. :: 152 mm. : 194 cm.
C. 32 mm. : 47 cm. :: 152 mm. : 195 cm.
D. 29 mm. : 37.5 cm. :: 152 mm. : 196 cm.
E. 12 mm. : 15.5 cm. :: 152 mm. : 196 cm.
F. 48 mm. : 62 cm. :: 152 mm. : 196 cm.

The same photograph also shows Dr. S. J. Crowe, whose height it is stated was 5 feet 8 inches (173 cm.). The doctor is not standing erect here, and a careful experimental posing of a man of this height and due attention to the perspective or foreshortening leads me to deduct 8 cm. from his stature because of his posture.

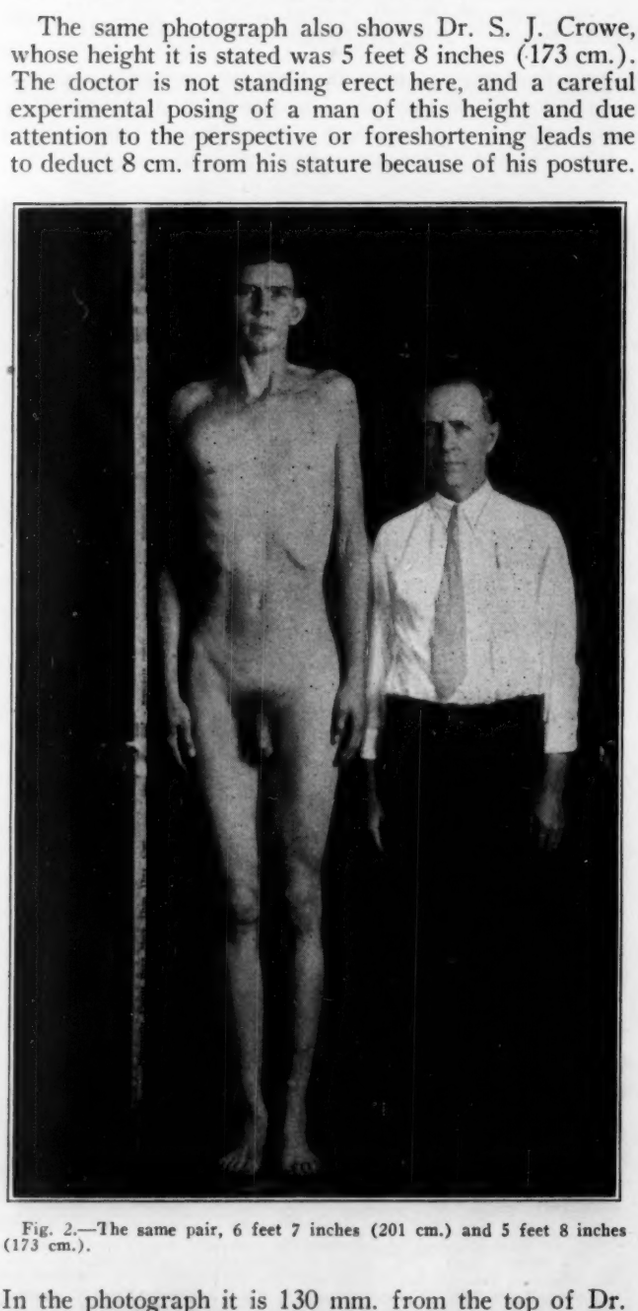

Fig. 2.—The same pair, 6 feet 7 inches (201 cm.) and 5 feet 8 inches (173 cm.).

In the photograph it is 130 mm. from the top of Dr. Crowe's head to the floor, which gives:

130 mm. : 165 cm. :: 152 mm. : 193 cm.

The same chair appears in both figures 220 and 224, and the legend for the latter calls it a "usual 18-inch chair." Eighteen inches=46 cm. In figure 220 the seat of the chair is 36 mm. from the floor. So:

36 mm. : 46 cm. :: 152 mm. : 194 cm.

All these final figures coincide very closely, so it must be concluded that their weighted mean, 195 cm., or 77 inches (6 feet 5 inches), represents Turner's height quite exactly in the stooped position of this photograph.

If a man of 8 feet 3 inches (99 inches) bows himself over until his height is lowered to 6 feet 5 inches (77 inches) he would appear very much more stooped than this photograph shows; for this seven ninths of his height would be the equivalent of a man of 5 feet 8 inches (68 inches) stooping over until his head is less than 53 inches (4 feet 5 inches) from the floor; i. e., 99:77::68:53. A quick test of such a stoop will show at once that Turner has not bent himself to any such extent, for it puts one's spine quite nearly horizontal.

Turning now to figure 224, one finds Turner seated in a chair, and his posture is fairly erect. Again with dividers and a scale one can take off these dimensions from the photograph:

From the crown of the head to the left trochanter, 47 mm.
From the left trochanter to the left knee, 32 mm.
From either knee to the floor at the heel, 31 mm.
Photograph's total height, if Turner were standing, 110 mm.

And now the measurements of this photograph:

B. The arm, from acromion to metacarpals, 43 mm.
C. The left humerus, 24 mm.
D. The left radius, 19 mm.
F. The left femur, 32 mm.
X. The height of the chair's seat, 23 mm.

If these proportions are analyzed by the measurements just quoted, the result is:

B. 43 mm. : 83 cm. :: 110 mm. : 212 cm.
C. 24 mm. : 47 cm. :: 110 mm. : 215 cm.
D. 19 mm. : 37.5 cm. :: 110 mm. : 217 cm.
F. 32 mm. : 62 cm. :: 110 mm. : 213 cm.
X. 23 mm. : 46 cm. :: 110 mm. : 220 cm.

From these it can be concluded that Turner's height when "straightened out" almost erect was their average, 216 cm. or 85 inches, which is, incidentally, a very impressive height.

A comparison can also be made with figure 246, on page 183. Here a woman 67 inches (170 cm.) tall holds the same two chairs, and the tops of their backs are just at the level of her trochanters. This height strikes Turner below his trochanters, just the length of one of his clavicles, or, in figure 220, 16 mm. below the trochanter. Here the height of the right trochanter is to his whole height as 84:152, assuming that his knees are bent just about as much as his shoulders are stooped. So we have:

84 — 16 : 84 :: 170 cm. : 210 cm.

210 cm.=82¾ inches, or 6 feet 10¾ inches, if Turner had the bodily proportions of the woman. But he was a bit longer legged, proportionally.

Really an 8-foot giant, or even one of 7 feet 6 inches, no matter how misshapen, would in the poses of either figure 220 or 224 appear far more bulky and vast. Circus giants can't use these ordinary opera chairs so comfortably.

As to the sources of the error, what occurred, in all likelihood, is that on the autopsy table Turner's full stretched height, thoroughly straightened at knees and hips and with the head thrown far back, was hastily measured by either Dr. Crowe or Dr. Sharpe with an ordinary foot rule ("under most inauspicious circumstances," says the text), and it was recorded as 8 feet 3 inches, instead of an actual 7 feet 3 inches. The figure 251.5 cm. was of course obtained by multiplying 8 feet 3 inches (99 inches) by 2.54, which is the usual conversion factor for inches to centimeters. The read-

ing undoubtedly should have been 7 feet 3 inches, or 87 inches, which is equivalent to 221 cm.

Turning back to figure 220, Turner, it is easy to see, has stooped over so that his height of 7 feet 3 inches (87 inches) is reduced to the calculated 6 feet 5 inches (77 inches), and the photograph clearly shows him bent over by this amount.

Cushing is not the first to err in "measuring" a giant. The "8 feet 10 inch" giant who was examined, after his death from diphtheria at the Willard Parker Memorial Hospital, New York, by Dr. Douglas Symmers,[2] was one of the two Hugos, and he was but 230 cm. (7 feet 6½ inches) tall when Launois measured him a few months before. Topinard's celebrated Finlander, "283 cm. or 9 feet 4 inches tall," is proved by Langer[3] to have been the Finnish giant Daniel Cajanus, who died in 1749. The bones of Cajanus are in the Leyden Museum, and his real height was 222 cm.; his femur measures 61.5 cm., or just 0.5 cm. less than Turner's, whose twin he actually was in height. Symmers probably accepted a press agent's statement; Topinard's error arose from a mistaken idea of the equivalents of certain national standards of length.

Thomas Hasler (not "Hessler," as Cushing calls him), described by Buhl,[4] was 227 cm. tall; his skeleton was mounted and is still to be seen in the museum of pathology. His right femur measures 67 cm. (Turner's was 62 cm.); the left was somewhat shortened by an old fracture of its neck.

The 19 year old giant at Bushire, Persia, described as 10 feet 6 inches (3.2 meters) tall by Prof. D. H. Fuchs[5] actually measured 220 cm. (7 feet 2½ inches) when he became patient 1084 at the Imperial Hospital of the Imperial Health Department at Teheran, Persia, according to a complete copy of his hospital record lately sent me by Hon. Charles C. Hart of the U. S. legation at Teheran.

The skeleton of the unknown Kentucky giant, in the Mütter Museum at Philadelphia, has a total height of 230 cm. The clavicles are 21.2 cm. long. The humerus, 47.5 cm., and the radius, 36 cm., are practically the same as Turner's; the femurs, 65.5 and 66.6 cm. respectively, right and left, exceed Turner's. Turner's femurs are also shorter than those of Cornelius Magrath, 217 cm. tall, whose skeleton is in Dublin, and of Charles Byrne, the Irish giant, 231 cm. tall, whose osseous framework was surreptitiously salvaged by John Hunter for the Museum of the Royal College of Surgeons at London. The tallest giant now on exhibition in America is the acromegalic "Jack Earl" (Jacob Ehrlich of El Paso, Texas), who measures 7 feet 7½ inches (233 cm.) tall; his trochanter-knee length is 68 cm.

Comparisons alone would compel one to say that, if Dr. Cushing's figure of 8 feet 3 inches for the giant's height were correct, poor Turner must have been very strenuously and ruthlessly unjointed when he was measured after his death in January 1911! So I repeat my conviction that he was only 7 feet 3 inches tall.

I have never been able to find an absolutely reliable account of a human being who has ever attained as much as 8 feet (244 cm.) in height.

2. Symmers, Douglas: Interstate M. J. **24**: 1013 (Nov.) 1917.
3. Langer: Wachsthum des menschlichen Skellets mit Bezug auf den Riesen, Denkschriften der kaiserl. Akad. d. Wissenschaften in Wien, Math.-Naturwissenschaft. Klasse **21**: 91, 1872.
4. Buhl: Mittheilungen aus dem pathologischen Institut zu München, 1878, p. 301.
5. Vienna letter, J. A. M. A. **104**: 490 (Feb. 9) 1935.

THE WATERHOUSE-FRIDERICHSEN SYNDROME

A REVIEW OF THE LITERATURE AND A REPORT OF TWO CASES

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NEW YORK

The disease now known as the Waterhouse-Friderichsen syndrome was recognized as an entity by Little[1] in 1901. He published a report of four cases of his own and, in reviewing the literature, found eight other cases which he stated, had been "hitherto unclassified." In his series he may have included at least one that was a purpura of a different etiology. In 1911 Waterhouse[2] in England reported a case and reviewed fifteen others. He described the syndrome and gave an accurate account of the symptomatology and pathology. Friderichsen[3] in 1918, in Germany, published a report of two cases of his own and gave a comprehensive review of the twelve cases reported by Little and sixteen other cases collected from the literature at large. In 1934 Bamatter[4] published a report of thirty-eight cases, two of which were his own. In a rather thorough search of the literature I have found reports of fifty-five cases[5] that seem undoubtedly to belong in this category and shall report a recent case of my own and one case from the records of the Willard Parker Hospital which in history, symptomatology and pathology give the typical characteristics of the disease.

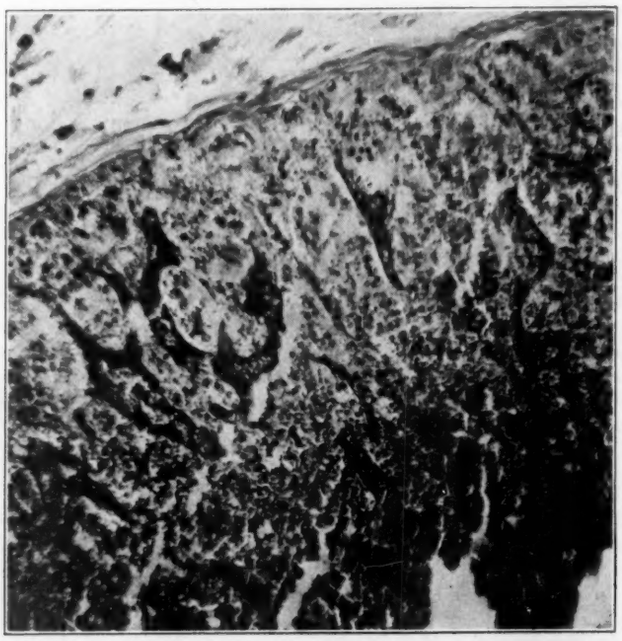
CASE 1.—A white boy, aged 7 years, well developed and well nourished, according to the mother, had been unusually healthy and strong. He had had a hemangioma of the left auricle at birth, which had been given several radium treatments by competent therapists. He had had measles at 2 years, pertussis at

From the Department of Pathology, Willard Parker Hospital, Department of Hospitals of New York City.

1. Little, E. G.: Cases of Purpura, Ending Fatally Associated with Hemorrhage into the Suprarenal Capsules, Brit. J. Dermat. **13**: 445-467 (Dec.) 1901 (cases 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12).
2. Waterhouse, R.: A Case of Suprarenal Apoplexy, Lancet **1**: 576 (March 4) 1911 (case 13).
3. Friderichsen, C.: Nebennierenapoplexie bei kleinen Kindern, Jahrb. f. Kinderh. **87**: 109, 1918 (cases 14, 15, 16, 17, 18).
4. Bamatter, F.: Fulminante Meningokokkensepsis: Zur Aetiologie des Syndroms von Waterhouse-Friderichsen, Jahrb. f. Kinderh. **142**: 129-162, 1934 (cases 19, 20).
5. In addition to the cases referred to in the other footnotes the literature includes:
Henderson, J. A., and Pettigrew, F.: Sudden Death from Hemorrhage into Suprarenal Capsules in Children, Brit. M. J. **1**: 14 (Jan. 2) 1932 (cases 28, 29).
Middleton, R., and Duane, W.: Fulminating Meningococcus Septicemia Without Meningitis, Am. J. M. Sc. **177**: 648-650 (May) 1929 (case 30).
Langmead, F.: On Three Cases of Suprarenal Apoplexy in Children, Lancet **1**: 1496 (May 28) 1904 (cases 31, 32, 33).
Garrod, A. E., and Drysdale, J. H.: Hemorrhage into Both Suprarenal Capsules, Tr. Path. Soc. London **49**: 257, 1898 (cases 34, 35, 36).
Blaher, P. S., and Bailey, B. E. G.: On Some Cases of Hemorrhage into Skin and Suprarenal Capsules, Brit. M. J. **1**: 75 (July 13) 1901 (cases 37, 38, 39, 40).
Battley, S.: Purpura Fulminans Due to Meningococcus, Am. J. Dis. Child. **33**: 244-248 (Feb.) 1927 (case 41).
Brown, L. L.: Adrenal Hemorrhage in an Infant, Minnesota Med. **11**: 750 (Nov.) 1928 (case 42).
Andrewes, F. W.: A Case of Acute Meningococcal Septicemia, Lancet **1**: 1172 (April 28) 1906 (case 43).
Netter, Salanier and Blanchier: Two Fresh Cases of Meningococcal Infection with Presence of Meningococci in Purpuric Eruptions, Brit. J. Child. Dis. **14**: 264 (Oct.-Dec.) 1917 (case 44).
Dwyer, H. L.: Purpura Fulminans, J. A. M. A. **88**: 1187 (April 22) 1922 (case 45).
Elliott, T. R., and Kaye, H. W.: A Note on Purpura in Meningococcal Infections, Quart. J. Med. **10**: 361-366 (July) 1917 (case 46).
Rosenthal, D. B.: Case of Acute Suprarenal Hemorrhage, Brit. M. J. **2**: 645-646 (Oct. 7) 1933 (case 47).
Kessel, J. S.: A Case of Acute Hemorrhage into Both Suprarenal Bodies, M. J. Australia **2**: 456, 1925 (case 48).
Dudgeon, L. S.: The Etiology, Pathology and Diagnosis of Adrenal Hemorrhage, Am. J. M. Sc. **127**: 134-146, 1904 (cases 49, 50, 51).
Battin, F. E.: Hemorrhage into the Suprarenal Capsule, Tr. Path. Soc. London **49**: 258, 1898 (case 52).
Talbot, E.: Cases of Hemorrhage into the Suprarenal Capsules, St. Bartholomew's Hosp. Rep. **36**: 207, 1900 (cases 53, 54).
Andrewes, F. W.: Hemorrhage into the Suprarenal Capsule, Tr. Path. Soc. London **49**: 259, 1898 (case 55).

4 years and mumps at 5 years. He had been in apparent good health up until 5 p. m. on the day of onset of this illness. At that time he complained of pain in his knee. There was no history or evidence of trauma. Shortly afterward he complained of malaise and refused to eat his supper. At 10:30 he vomited, complained of weakness and asked to be lifted back into his bed. He slept throughout the night, but at 6:30 a. m. his mother was attracted by the child's color. He appeared "bluish all over his body." She found that he had been incontinent of urine and feces during the night. The child was stuporous and irrational. His breathing was "heavy." A physician was summoned and at 10 o'clock he found the child semicomatose and cyanotic, with a beginning purpuric rash and a weak and rapid pulse.

He was admitted to the hospital at 10:50. The respiratory rate was 36, and his breathing was labored. The pulse at the wrist was imperceptible; the apical pulse was rapid but regular. The skin showed a startling cyanosis. Over the entire body excepting the palms, soles and scalp there was a macular, purpuric rash, the areas varying from a few millimeters in diameter to palm size. They were frequently confluent. These areas were almost solid over the back and the surfaces of the extremities that touched the bed. Scattered over the body were



Section of adrenal under low power, showing destruction of medulla and fascicular layer of cortex by hemorrhage.

numerous petechiae. The conjunctivae and mucous membrane of the fauces and pharynx were deeply injected. The neck was stiff and Kernig's sign was present in both legs. The temperature on admission was 106 F. The lungs were clinically normal. There was a marked somatic hyperesthesia. A spinal tap was done. The fluid was crystal clear, under normal pressure, contained 5 mononuclear cells per cubic millimeter, had a normal albumin, globulin and sugar content, and grew no organism on culture. In attempting a blood examination, great difficulty was experienced in obtaining a sufficient amount of blood from a needle puncture wound. Enough for a smear was extracted by the technician. The differential count showed 42 per cent polymorphonuclear leukocytes and 58 per cent lymphocytes. About 75 per cent of the former showed vacuoles in the cytoplasm, approaching the size of the nuclear lobes. The temperature rose to 107 F., respirations became more labored, the cyanosis deepened, the heart sounds became more faint, and the patient died at 11:40, fifty minutes after admission and nineteen hours after the initial symptom. Antemortem and postmortem blood cultures produced a profuse growth of Micrococcus meningitidis. Cultures made from the brain post mortem grew the same organism.

At autopsy, petechiae were seen in the mucosa of the mouth, larynx, stomach and intestine. Small hemorrhages, from 1 to 3 mm. in diameter, were found in profusion throughout the peritoneum, pleurae and pericardium. The lungs, kidneys, spleen and liver showed marked congestion with beginning toxic changes in the two latter. The thymus was large, weighing 38 Gm., and hyperplastic. The vessels of the surface of the brain were engorged; the brain was wet and heavy but there was no overt meningitis. The pituitary was deeply congested. The adrenals presented the picture of major interest. They were extremely large, 8.5 by 3 by 2.5 cm., appearing almost as large as the kidneys, weighing 15 and 18 Gm. each. They were a deep purple and the capsules were tense with blood.

Case 2.—A white boy, aged 5 years, well nourished and well developed, was admitted to the hospital at 2:30 p. m., in November 1928. The past history revealed that, other than pneumonia at 3 years, the child had been perfectly healthy until the onset of this illness on the afternoon of the preceding day. The child complained of headache. He was found to have a fever. He vomited.

On admission the patient was cyanotic. The respirations were shallow. The pulse was imperceptible at the wrist and the apical pulse was 168 per minute; the heart sounds were distant. The temperature was 107.6 F. There were scattered râles over both lungs, and a petechial rash was present over the entire body. The pupils were dilated and did not react to light. The head was retracted and the back rigid, and the extremities were spastic. A spinal tap was done. The fluid showed an increase in tension, a "large increase" in cells, with 98 per cent polymorphonuclear leukocytes, a few gram-negative diplococci, mostly extracellular, a four plus albumin and globulin reaction, and a reduction in sugar content. Meningococcus was grown from the spinal fluid. Many of the petechiae in the skin developed into ecchymoses. The child died two and one-half hours after admission, about twenty-four hours after the onset.

At autopsy, petechiae were found in the pleurae, pericardium and serosa of the peritoneum and mesentery. The surface vessels of the brain were injected. The lungs were congested. There was a beginning purulent pericarditis and meningitis. The mucosa of both the small and the large intestine showed petechial hemorrhages. The thymus was large, weighing 19 Gm. The liver and spleen showed moderate toxic changes. No hemorrhage was noted grossly in the adrenals but under the microscope they showed advanced congestion and definite hemorrhage, especially in the fascicular layer. They weighed 10 Gm. each.

SYMPTOMATOLOGY

The history and symptoms of case 1 are so frequently repeated in the reports of other cases that one is compelled to feel the importance of recognizing the Waterhouse-Friderichsen syndrome as a disease entity. By far the majority of the cases occur in patients under the age of 1 year, though it is seen not infrequently in adults. Herrick [6] has seen many cases in army practice. Of the fifty-seven cases under discussion, fifteen of the patients, or 26 per cent, were under 6 months of age. Twenty-nine, or 52 per cent, were 1 year or younger, and forty, or 70 per cent, 2 years or younger. Of the fifty-seven patients there were six adults, three of whom were over 50. Of the forty-seven cases in which sex was mentioned, twenty-six of the patients were males and twenty-one females.

The typical history states that the patient was in perfect health until the onset of the disease. Of those reviewed, the only cases without sudden onset were complicated with other conditions, which might easily have altered the characteristic early signs.

The initial symptom may be restlessness, headache or malaise but is more likely to be referred to the gastro-intestinal tract. Abdominal pain is mentioned frequently enough to make its occurrence more than coincidence. Thirty-one of the histories revealed vomiting as an early symptom. This was found to be as frequent in adults as in children and infants. Loss of

6. Herrick, W. W.: Case of Purpura Fulminans, J. A. M. A. 76: 55 (Jan. 1) 1921 (cases 21, 22).

appetite, a flushed face, and perhaps a moderate fever may be the only signals to warn the parent of the child's impending condition. The patient soon becomes stuporous. This may be mistaken for healthy slumber. It is not infrequent to find the patient when he retires complaining of feeling below par and, the following morning, discover him comatose and moribund.

Cyanosis is usually noted about ten or twelve hours after the onset. It is so startling that it attracts immediate attention. This is frequently the first symptom that impresses the gravity of the condition on the mind of the relative or friend and brings the patient to the physician. Twenty-seven of the reports mention cyanosis as an outstanding feature of the symptomatology. The lips and nails of the patient are blue and the skin is livid. Two reports mention alternation of cyanosis with pallor. In one patient a peculiar mottled appearance was evident, especially over the face and hands.

Soon after the cyanosis has manifested itself, petechiae may be noted scattered over the trunk, face and extremities. Their onset is sudden and they increase in size with astonishing rapidity into a vivid, purple macular rash. The mother of our patient watched these "spots" develop while giving the patient a bath. In a small proportion of the cases the hemorrhage into the skin does not advance beyond the petechial stage. Out of the fifty-seven cases studied, thirteen showed neither petechiae nor macular hemorrhage. As the areas increase in size they become confluent and the skin takes on a blotchy appearance, some of the areas being the size of the palm or larger. Over the contact areas, i. e., the buttocks, back, and extensor surfaces of the arms, the entire surface is involved, so that it assumes the appearance of postmortem lividity. The rash remains until death, usually from six to ten hours later.

At this time the patient is found to be stuporous or semicomatose. One may usually find moist râles scattered over the chest, and the respiratory rate may be increased. In thirteen cases dyspnea was recorded, and in a considerably fewer number stertorous breathing and Cheyne-Stokes respirations were noted. The patient may be incontinent. One or more convulsions were listed in twelve of the reported cases. Symptoms of early meningeal involvement are not uncommon at this time. This may be manifested by headache, altered reflexes and a feeling of profound weakness. It is of interest to note that, of the patients who received spinal taps, in only six were there abnormal manifestations. In three there was an increase in cells, in six the meningococcus was isolated from the spinal fluid, and in four there was an increase in tension. There is a characteristically septic spiking temperature, which may range from subnormal to 108 F. Early in the disease the increase in pulse rate is proportionate to the rise in temperature, but as it progresses the rate mounts as the circulatory system fails. The rhythm was affected in only one case, but the quality is generally found to be poor and fluctuating. The radial pulse usually becomes imperceptible at about the period of the development of the rash, and at this time also the heart sounds are heard to be indistinct and of poor quality. In three cases injections of epinephrine seem to have caused very temporary improvement in the cardiovascular picture. The blood pressure may be found to be low.

A leukocytosis would be expected. This is mentioned in only seven of the reports. A shift to the left in the cells of the myelogenous series was noted by Bamatter. Two reports mention difficulty experienced in expressing enough blood for counts and smears by the usual needle-prick method. This was true in our case. The technician finally contented herself with only enough blood to make smears. No Gram stain was done on these smears. Most of the cells were vacuolated and showed other signs of degenerative change. Unfortunately the smears were discarded before a thorough search for organisms was made.

Other signs and symptoms mentioned in five or less reports are a low surface temperature with high mouth and rectal temperatures, muscle flaccidity, low blood sugar, chills, tremor, cough, edema of the lower extremities, strabismus, elevation of the nonprotein nitrogen of the blood, and rigidity of the abdominal muscles.

The importance of finding the organism in the blood stream is stressed by McLean and Caffey.[7] In a series of cases of meningococcic meningitis presenting purpuric exanthemas, they were able to demonstrate intracellular gram-negative organisms in 83 per cent. They made a puncture wound through one of the hemorrhagic skin lesions and from the blood expressed they made smears which they stained by Gram's method. In a series of sixteen of their cases, in which smears and blood cultures were taken simultaneously, the former were positive in thirteen and the latter in ten. This method was used by Netter, Salanier and Wolfrom[8] in 1916. They believe that the hemorrhage is due to the presence of meningococci around the vessels.

PATHOLOGY

The most constant pathologic condition at autopsy is massive adrenal hemorrhage. In the fifty-seven cases studied, all but two came to postmortem examination, and of the fifty-five cases fifty-two showed bilateral adrenal hemorrhage, three showed unilateral adrenal hemorrhage (all on the right side), and in only one was hemorrhage not mentioned. In one case the capsule had been ruptured, resulting in a hemorrhagic peritonitis. In our case the glands were immense and of a necrotic purple. The capsules were tense and, when opened, grossly resembled blood cysts. No normal glandular tissue could be made out on either side. Under the microscope it was seen that in most places the medullary tissue had completely fallen away and in others was replaced by extravasated blood. Around the capsule there remained a fringe of recognizable cortical tissue. As these cells approached the fascicular layer, they became more widely separated and compressed by blood dissecting in from the medulla. In most places there was complete obliteration of all three glandular layers.

Twenty-three reports mentioned small hemorrhages into the serosa of the peritoneum, pleurae or pericardia, or all three. Fifteen mentioned injection of the superficial vessels of the brain, and six noted pulmonary congestion. Fifteen reports recorded enlargement of lymph nodes or Peyer's patches, or both, and nine mentioned a large thymus. The latter was true in case 1, in which the thymus of a 7 year old child

7. McLean, Stafford, and Caffey, John: Endemic Purpuric Meningococcus Bacteremia in Early Life: Diagnostic Values of Smears from Purpuric Lesions, Am. J. Dis. Child. **42**: 1053-1074 (Nov.) 1931.

8. Netter, A., and Salanier, M.: Presence of Meningococci in the Purpuric Elements of Meningococcal Infection, Brit. J. Child. Dis. **14**: 101 (April-June) 1917. Netter, A.; Salanier, M., and Wolfrom, I.: A New Case of Hyperacute Purpura with Cerebrospinal Meningitis: Recognition of Its Meningococcal Nature During Life by Microscopical Examination, Brit. J. Child. Dis. **14**: 104 (April-June) 1917 (case 23).

weighed 38 Gm. Rabinowitz [9] notes that status thymolymphaticus has often been associated with an insufficiency of the chromaffin system. A few reports mention hemorrhage into the mucosa of the gastrointestinal tract. This, according to McLean and Caffey, may account for the abdominal pain and diarrhea sometimes seen.

It is interesting to correlate the pathologic changes found with the more or less characteristic clinical and laboratory manifestations in this disease. Such symptoms as hypotension, a feeling of weakness, low blood sugar, muscle flaccidity, rise in the nonprotein nitrogen of the blood, vomiting and circulatory collapse have long been accredited to the functional failure of the adrenal glands. Rogoff [10] states that the experimental animal may suffer a loss of both adrenal medullas and one cortex without radically influencing his life and health, and that there is "no good evidence that epinephrine plays a rôle in the maintenance of normal blood pressure." The functional correlation between the adrenal medulla and cortex is uncertain. It is known that in the lower forms they exist as two separate bodies and that removal of both cortices in experimental animals invariably causes death. Loeb [11] clearly shows that the adrenal gland exerts a controlling influence on the metabolism of sodium ion excretion, depleting the blood of both sodium and chloride. Concurrent with this loss in sodium is a relative dehydration through the kidneys. Thus the actual blood volume may be diminished, which conceivably might result in shock with its resulting chain of symptoms. There is no proof that death in the Waterhouse-Friderichsen syndrome is due to adrenal failure rather than to toxicity caused by the invasion of the blood stream. It is of first importance, therefore, to note what happens to the sodium metabolism in this disease. If there is a marked fall in the blood sodium concentration, one may assume that death is probably due, in part at least, to the collapse following adrenal destruction.

The chain of signs and symptoms that characterize the Waterhouse-Friderichsen syndrome is doubtlessly caused by a bacterial invasion of the blood stream. Up until 1916, the number and variety of organisms cultured from the blood, adrenal gland and skin lesions, including the streptococcus, the staphylococcus, colon bacillus, Bacillus pyocyaneus, and Bacillus Friedländer, suggests either that this relatively constant chain of symptoms is caused by numerous different and unrelated organisms or that the methods of culture were faulty. Since almost universally the literature after 1916 subscribes the cause to Micrococcus meningitidis, one is more inclined to believe the latter. The splendid work of Maclagan and Cooke,[12] McLean and Caffey, Bamatter and several others leaves little doubt that the disease is most frequently caused by the meningococcus. That some of the symptoms may be caused by other organisms is no less certain. After reviewing the literature, one cannot help but feel that the meningococcus is the sole cause of the syndrome, but only accurate bacteriologic methods, employed in a larger series of cases, will settle the question definitely. Should it be found that the meningococcus is the only organism causing the disease, the name of the syndrome should be changed to fulminating meningococcemia.

When one realizes the preference of the meningococcus for localization on the brain and meningeal surfaces and considers that the origin of the central nervous system, adrenal medulla and skin is from the same embryologic anlage, one is even more prejudiced to the meningococcus theory.

DIAGNOSIS

If treatment with adrenal extracts and sodium chloride proves to be of value in the Waterhouse-Friderichsen syndrome, it will be necessary to distinguish this condition from the rapidly fatal, acute, fulminating cerebrospinal fever. The differentiation may be difficult. The symptoms of adrenal failure and the relatively negative spinal fluid observations are the points on which diagnosis must be made, and even these may be masked or changed. It is known that at least some acute meningitides begin as an invasion of the blood stream and that some fulminant meningococcemias show meningeal localization before death. Indeed, some writers believe that all cases of meningococcemia would go on to a purulent meningitis were it not for the intervention of death.

Differentiation from other conditions should not be difficult. The differences in courses should save the traumatic adrenal hemorrhage seen following birth injuries and purpuras of varying etiologies from confusion with it. Out of eleven cases of adrenal hemorrhage that came to autopsy at the Willard Parker Hospital, death was caused in four by toxic diphtheria, in two by the Waterhouse-Friderichsen syndrome, in two by scarlet fever, and in one each by anterior poliomyelitis, meningitis (Streptococcus hemolyticus) and pneumonia.

PROGNOSIS AND THERAPY

The prognosis of the disease has, to date, been universally fatal. The duration is rarely longer than twenty-four hours. In a few cases, death has terminated the disease after forty-eight hours. In each of these cases, hemorrhage into one adrenal only is recorded. Therapy, of course, must at this time be largely theoretical. If a rapid loss of sodium ion from the blood stream, followed by fluid depletion, is a result of the adrenal destruction, it would seem rational to replace these elements as rapidly as possible. This could best be done by intravenous injection of sodium chloride solution. It would be interesting to note the effect of large doses of adrenal cortex extract and, since epinephrine seems to increase the potency of cortical extract in adrenalectomized animals, it would seem advisable to administer this drug also. The intravenous use of large doses of antimeningococcus serum would seem consistent with the best principles of treatment. If the infection might be combated with serum, and sodium chloride, fluid, cortical extract and epinephrine given to replace the loss resulting from adrenal failure, and supportive treatment carried out with blood transfusions and intravenous dextrose, it is not inconceivable that some of these patients may in the future be saved.

SUMMARY

The Waterhouse-Friderichsen syndrome was first accurately described in the literature in 1901. Since that time it has been recognized in England and Germany as a disease entity. The symptomatology includes sudden onset, malaise, restlessness, and often

9. Rabinowitz, M. A.: Adrenal Hemorrhage in Infancy, Am. J. M. Sc. **166:** 513 (Oct.) 1923 (cases 24, 25).
10. Rogoff, J. M.: Glandular Physiology and Therapy: The Adrenal Medulla, J. A. M. A. **104:** 2088-2093 (June 8) 1935.
11. Loeb, R. F.: Glandular Physiology and Therapy: The Adrenal Cortex, J. A. M. A. **104:** 2177-2182 (June 15) 1935.
12. Maclagan, P. W., and Cooke, W. E.: The Fulminating Type of Cerebrospinal Fever: Pathology and Cause of Death, Lancet **2:** 1054 (Dec. 23) 1916 (cases 26, 27).

gastro-intestinal symptoms. These are followed shortly by lethargy, which rapidly deepens into coma. High fever, weak, rapid pulse, intense cyanosis and purpuric hemorrhages into the skin are characteristic. The disease is usually fatal in from sixteen to twenty-four hours. Massive, bilateral adrenal hemorrhage is the most common postmortem observation. The etiology is probably a fulminating meningococcemia. Suggested therapy includes adrenal cortex extract, epinephrine, sodium chloride, fluids, antimeningococcus serum, dextrose and transfusions.

Foot of Fifteenth Street.

CONGENITAL BONY TEMPOROMANDIBULAR ANKYLOSIS AND FACIAL HEMIATROPHY

REVIEW OF THE LITERATURE AND REPORT OF A CASE

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Bony or fibrous ankylosis of the temporomandibular joint is not a clinical curiosity, but a bony ankylosis of this articulation occurring in the new-born associated with maxillary and mandibular hemiatrophy is of sufficient rarity to warrant a report.

REVIEW OF THE LITERATURE

Numerous cases of bony intra-articular temporomandibular ankyloses, discovered in the early years of life, have been reported.[1] In all instances in which the ankylosis was discovered within the first year of life or even in those instances in which it was discovered later without a definite history of postnatal trauma there was a history of a difficult forceps delivery. Langenbach,[2] prior to 1903, reported a case of bilateral bony ankylosis resulting shortly after a difficult forceps delivery. At the sixth year of life, arthroplasty was performed and a satisfactory functional result was obtained. Ballantyne[3] cited several cases of hemiatrophy of the mandible and maxilla and stated that this anomaly was often accompanied by ankylosis of the temporomandibular joint; however, no actual case of temporomandibular ankylosis is reported in this complete work. Brash[4] reported a case of facial hemiatrophy with malformation of the ear, but no mention is made of any temporomandibular joint involvement. Canton[5] saw a child, the sixth of eight normal children, who presented atrophy of the left side of the face, the maxilla and mandible all being involved. The ear was malformed, and the usual auditory canal was replaced by two small fistulas.

ETIOLOGY

The etiology of temporomandibular ankylosis is generally ascribed to infection or trauma. Bony ankylosis has been known to result from otitis media, dentoalveolar abscesses and complications following scarlet fever,[6] gonorrhea, and even typhoid; in the majority of cases, however, trauma was the direct etiologic factor. Ivy[7] believed that the so-called congenital ankylosis was usually the result of traumatic injuries received at birth and should not be regarded as a true congenital abnormality. Brophy[8] in his extensive work on oral surgery failed to mention the existence of such a condition, nor did Arlow[9] or Gladstone.[10] Blair[11] believed that the so-called congenital ankylosis was "very unusual" and when present was due to trauma shortly after birth or during delivery. He believed that at first a false ankylosis or fibrous connective tissue fixation occurred which then became partially converted into osseous tissue, or that by the use of the forceps in delivery the base of the cranium was fractured in the region of the temporomandibular joint and ankylosis thus resulted. In my opinion, ankyloses arising from birth injuries are not in the true sense of the word congenital.

PATHOGENESIS

Hemiatrophy of the mandible and maxilla must be carefully distinguished from hypoplasia or interference of growth of the mandible resulting from early ankylosis. The hemiatrophy of the mandible and maxilla found at birth is more likely explained on a trophic basis, whereas that occurring after birth is explained on a dysfunctional basis. Postmortem studies[12] of a patient with progressive hemiatrophy of the face commencing at 12 years revealed definite changes in some of the nerve fibers supplying the aforementioned structures. Underdevelopment of the maxilla and mandible and ankylosis of the temporomandibular joint might be explained by pressure, amniotic or otherwise, acting on the region of the first branchial arches, causing arrest of development of the parts formed from this branchial segment. This is evidenced in a case reported by Ogston,[13] in which a unilateral hemiatrophy of the mandible was associated with failure of development of the auditory structures also derived from this arch.

DIAGNOSIS

Unexplained cyanotic attacks[14] or inability or difficulty in normal nursing may be the first indication of this condition. With bilateral bony ankylosis the mandible cannot be moved, but with a unilateral ankylosis a slight degree of movement or sense of movement is often experienced on examination. Diagnosis is usually made on the basis of developmental inequality of the two sides of the face if the condition is of long duration. In all cases a roentgenologic examination is necessary for the establishment of the diagnosis and to determine the extent and location of the bony union if one exists. Immobility of the mandible in itself is not pathognomonic of bony ankylosis.

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3. Ballantyne, J. W.: Manual of Antenatal Pathology and Hygiene, Edinburgh, W. Green & Sons, Ltd., 1902.
4. Brash, J. C.: The Etiology of the Irregularities and Malocclusion of the Teeth, Dental Board of the United Kingdom, 44 Hallem Street, London, England.
5. Canton: Tr. Path. Soc. London **12**: 237, 1860-1861.
6. Bony Ankylosis of the Lower Jaw: Arthroplasty with Full Restoration of Active Movement After Eleven Years, Proc. Roy. Soc. Med. **17**, 1924.
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8. Brophy, T. W.: Oral Surgery, Philadelphia, P. Blakiston's Son & Co., 1918.
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10. Gladstone, R. J., and Wakeley, C. P. G.: Defective Development of the Mandibular Arch, J. Anat. **57**: 149, 1922-1923.
11. Blair, V. P., and Ivy, R. H.: Essentials of Oral Surgery, St. Louis, C. V. Mosby Company, 1923.
12. Bramwell, Byron: Atlas of Clinical Medicine, Edinburgh, T. & A. Constable, 1892, vol. 1.
13. Ogston, A.: On Congenital Malformations of the Lower Jaw, Glasgow M. J. **6**: 289, 1874.
14. Eley, R. C., and Farber, Sidney: Hypoplasia of the Mandible as a Cause of Cyanotic Attacks in the Newly Born Infant, Am. J. Dis. Child. **39**: 1167 (June) 1930.

TREATMENT

Temporomandibular ankylosis was the first condition to direct the surgeon's attention to the necessity for arthroplastic intervention. Excision of the head and neck of the condyle was first performed by Professor Humphrey of Cambridge in 1856.[15] Wilms established a joint in front of existing cicatricial tissue in 1858. Verneuil[16] in 1860 performed an arthroplasty of the temporomandibular joint and even interposed a flap of the temporal muscle and fascia between the bony fragments; Helferick in 1893 reported several successful cases, although he interposed only muscle tissue between the fragments. Osteotomy of the body or ascending ramus of the mandible was attempted. While the operation was less difficult, the functional results were far inferior to arthroplasty as near the joint itself as possible. In 1915 Ricket and Schmidt, who had previously employed ivory joints, used a skin flap to keep the bony fragments separated. Brophy used a method partaking of both osteotomy and arthroplasty, introducing gutta percha between the bony fragments which, in the few weeks time this tissue was allowed to remain, served to form a hygroma. The gutta percha was usually removed after four weeks. Ivy, Blair, Murphy[1] and Lyons[17] have all modified and added minor refinements to the original operation of Verneuil, which is today the accepted method. The different operations vary principally in the type of incision employed and the exposure of the joint obtained.

Perhaps no other arthroplasty operation is as successful as that of the temporomandibular joint. The component parts of the newly formed joint are firmly held in position by the scar tissue and the strong muscular sling formed by the masseter, internal pterygoid and other masticatory muscles. Even functional stress applied to the joint during mastication may be lessened by the presence of food between the teeth. Even when arthroplasty is delayed for many years the results are striking, and apparently the ankylosis of one side of the jaw produces no pathologic changes in the uninvolved one. Cruveilhier, cited by Brophy, reported the case of a woman, aged 89, who had had an ankylosis of the left temporomandibular joint since she was 1 year of age. The right joint functioned satisfactorily after operation, although it has been immobilized for eighty-eight years.

Ankylosis occurring in the first few years of life, provided sufficient nourishment can be obtained, is best treated after 6 years of age, at which time the cooperation of the patient, so essential to a satisfactory functional result, can be perhaps earliest secured. Moreover, the first permanent molars are usually erupted at this time, enabling the placing of an orthodontic appliance to stimulate development of the small mandible. Reeducation of speech may be necessary, but this is usually accomplished within two months after operation, provided no other abnormality is present.

REPORT OF CASE

A woman, aged 27, had given birth to three children, the first two being normal and the third child having clubbed feet and other developmental abnormalities the nature of which were unknown. It died at 1 month of age. The Wassermann reaction of the mother was negative.

She was admitted to the New Haven Hospital Oct. 16, 1934, because of labor pains which had begun the preceding night and disappeared during the day, to reappear in the evening. The expected date of delivery was October 28. There were no pains after noon of the day of admission. A medical induction of labor was begun October 17 with castor oil, quinine and a soapsuds enema, but this failed to produce uterine contractions and the patient was discharged on this day from the hospital.

Labor pains were again experienced November 6, and the mother was readmitted to the New Haven Hospital November 7; at 4:20 p. m. she was spontaneously delivered of a 3,200 Gm. boy, the subject of this report. Approximately 3,500 to 5,000 cc. of amniotic fluid escaped after the membranes ruptured. At birth a malformation of the left side of the face was noted.

On closer examination it was noted that the left side of the face below the zygomatic arch was sunken and no superior border or ascending ramus of the mandible could be felt, nor could the left temporomandibular joint be palpated. The horizontal ramus of the mandible was present but rudimentary. The jaws were in apposition with only a cracklike aperture between the maxilla and the mandible on the right, but on the left the soft tissues were continuous between the two jaws, beginning at a point 1 cm. to the left of the midline. The right half of the jaws could be separated with a tongue depressor for about 0.5 mm. The left eye and facial muscles did not move. Just anterior to the left ear was a small pedunculated wartlike growth. Small portwine spots were observed on the cheek and other portions of the body. Roentgenologic examination of the abnormality revealed general aplasia of the left ascending ramus and condyle of the mandible. The left temporomandibular joint could not be definitely visualized.

November 8 the infant was taken to the operating room. The face was prepared with soap, water and 5 per cent solution of trinitrophenol. The lateral portions of the upper and lower lips were infiltrated with a small amount of procaine hydrochloride. Silk traction sutures were placed in them to facilitate exposure of the oral cavity. Examination of the maxilla and mandible at this time revealed fusion of the left alveolar processes from a point 1 cm. from the midline to the retromolar area. A diathermy needle was used to transect the soft tissues, but it was further necessary to use a small chisel to separate a number of bony trabeculae which joined the alveolar processes. When these were separated it was possible to open the child's mouth almost 1 cm., and the condylar movements were felt to be practically normal. The tooth bud of the lower left deciduous canine was exposed during the operation and removed. There was no extensive bleeding. The infant stood the procedure well.

November 9 a slight depression was noted in the left supraorbital ridge and the left eye appeared half closed. On the 14th a distinct but slight muscle weakness was noted of the lower facial muscles on the left. The left eye was never opened as widely as the right. November 16 a distinct difference in the size of the pupils was first noted, the right pupil always being larger than the left even in bright light. There were no recorded observations prior to this date on the size of the pupils. The left ear drum was examined but no abnormality was noted. By December 12 the mandible could easily be opened 2 cm. A slight enophthalmos was observed on the left and Horner's syndrome was suggested. The patient was then discharged from the hospital and was not seen until Jan. 9, 1935, when he was readmitted to the outpatient department with the jaws again firmly fused. At this time no movement of the mandible could be obtained, but an anterior cleft approximately 0.5 by 3 cm. remained through which adequate nourishment could be obtained.

It was decided to postpone operative procedures until the child was 5 or 6 years old, unless feeding difficulties necessitated an earlier operation. The patient was again discharged January 29 after a period of observation, to be followed through the outpatient department.

The patient was again seen February 27, when there was a definite Horner's syndrome on the left. He was brought back again May 13, with a complaint of difficulty in feeding. At this time the upper and lower left first incisor teeth were erupting; the right centrals were not visible through the mucous membrane. The right pupil failed to react to light, remaining dilated at all times. Roentgenograms failed to indi-

15. Humphrey: Arthroplasty of the Temporomandibular Joint, Med. A. J., 1856.
16. Verneuil, cited by Beavis, J. O.: Intra-Articular Bony Ankylosis of the Temporomandibular Joint, J. A. Dental A. **15**: 871, 1928.
17. Lyons, C. J.: Ankylosis of the Jaws, J. A. M. A. **68**: 174 (Jan. 20) 1917.

cate clearly the exact point of ankylosis, nor could the left temporomandibular joint be satisfactorily visualized. August 27 all the upper and lower deciduous incisors were erupted. The ankylosis of the mandible and Horner's syndrome remained unchanged.

COMMENT

This particular anomaly is in itself very rare, and this case presented several interesting features. Ivy [18] has not heard of a similar case. Ogston [13] in his comprehensive discussion of congenital malformations of the lower jaw mentioned that bony ankylosis is often associated with congenital hemiatrophy of the face but did not cite any case. Brophy [8] stated that in a larger number of cases of congenitally small mandibles there was usually present at birth some degree of ankylosis. Numerous cases of bony ankylosis have been reported following in every instance a difficult forceps delivery or an early postnatal trauma. It will be remembered that in this instance delivery was at full term and spontaneous. Ballantyne [3] stated that the defect may be due to pressure, amniotic or otherwise, acting on the region of the first branchial arch, causing imperfect development or irregular arrangement of the structures arising from this transitory structure. Between 3,500 and 5,000 cc. of amniotic fluid, a considerable hydramnios, was present in this case. The possible effect that the premature labor pains and the attempted medical induction of labor might have had in the production of this anomaly must be considered. More fully developed mandibular and maxillary structures have been seen in seven months fetuses than was observed on the side showing the anomaly. It would seem likely that the factor responsible for this defect had been acting for some time prior to the premature labor pains. This assumption is in agreement with Charles's [19] study on the growth of the mandible.

Numerous writers have repeatedly associated progressive hemiatrophy occurring after birth with some trophic nervous disorder. Virchow [20] went so far as to call the condition "neurotic atrophy" of the face. If one assumes a trophic disturbance responsible for this anomaly, certain discrepancies are evident on an anatomic and physiologic basis. Of two large series of cases reported,[21] the majority showed no anhydrosis, no change in the size of the pupils, no difference in the temperature and no unusual growth of hair. Likewise no changes in the orbicularis oculi muscles or the quantitative flow of saliva were noted. The evidences of atrophy were found in the skin, in the connective tissue and in the fat and bones. The muscles, even those supplied by the fifth nerve, were affected only in a minor degree. The muscles supplied by the seventh nerve were unaffected. Many cases showed marked hemiatrophy of the tongue. The skin usually had a glossy appearance characteristic of trophic disturbances.

In most of the reported cases the usual syndrome of cervical sympathetic ganglion injury was not present, and in Bramwell's [12] case no evidence of injury to this structure was observed on postmortem examination. The latter found an interstitial neuritis of all branches of the fifth nerve, most markedly the second division. The motor and sensory ganglions and the descending root of the fifth nerve were unaffected. No changes were observed in the twelfth nerve. A peripheral neuritis was observed about the radial nerve. Bramwell believed that the pathologic changes found in this case did not satisfactorily explain the hemiatrophy.

The subject of this report showed undoubted evidence of a typical Horner's syndrome, as shown in the accompanying illustration. This suggested that a trophic dysfunction might be responsible for the hemiatrophy at birth. However, it was not later reflected in the dental development, as the deciduous incisors on the affected side erupted prior to those on the unaffected side and within the normal eruption time for these teeth.

A case of hemihypertrophy, as contrasted to atrophy, has been observed [22] in which at birth all the structures of the involved side, including the tongue, showed a precocious and excessive development. The right lower permanent incisors and right first permanent molars erupted at 3 years of age and were larger than normal. At 6 years the corresponding teeth on the other side of the face were just erupting or were not visible.

Infant at age of 5 weeks.

A trophic disorder occurring late in the development of the infant might not produce changes in the size of the temporary teeth; however, one would expect delayed eruption of these teeth, which was not present in the case reported. It must be remembered that in a disease such as congenital syphilis, for example, with its constitutional implications, the deciduous teeth are rarely involved. Therefore it is perhaps too early to make any definite statement concerning the dental structures in this case.[23]

As regards the mode of therapy in this particular case, it is possible that reankylosis could have been prevented by the insertion of a fascial or muscular slip between the bony fragments. In adults, ankylosis has been found almost always to reoccur when fascia or muscle is not placed between the fragments in spite of the best cooperative efforts of the patient.

18. Ivy, R. H.: Personal communication to the author.
19. Charles, S. W.: The Temporomandibular Joint and Its Influence on the Growth of the Mandible, Brit. Dent. J. **46**: 845, 1925.
20. Cited by Bramwell.[12]
21. Bramwell,[12] Mills, C. K.: Progressive Unilateral Facial Atrophy, in Peppers' System of Medicine, Philadelphia, Lea & Febiger **5**: 698, 1886.
22. A Remarkable Case of Facial Hemihypertrophy, Brit. Dent. J. **46**: 122, 1925.
23. Cavallaro, Joseph: Syphilis in Its Relation to Dentition, Dent. Cosmos **50**: 116, 1908.

Provided adequate nutrition can be maintained, further operative procedures are not contemplated until the patient is 5 or 6 years old, when an arthroplastic operation will be performed. Orthodontic treatment will then be practical and will aid in stimulating further development of the ankylosed side of the face and in correcting the asymmetry.[24]

SUMMARY

A full term spontaneously delivered male infant showed true congenital bony ankylosis in the region of the left temporomandibular joint and alveolar ridges associated with maxillary and mandibular hemiatrophy. Labor was not abnormal, but a moderate hydramnios was present. Lysis of the fibrous and bony fixations was performed twenty-four hours after birth, which permitted fairly normal mandibular movements. Bony ankylosis recurred in two months; however, a sufficient anterior aperture remained to permit adequate feeding. No report of a similar anomaly has been discovered in the literature.

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GLOSSODYNIA

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A discussion of the symptom known as glossodynia is of academic rather than practical importance, from the standpoint of the physician, because such cases are rather infrequently seen. A search of the records of the Mayo Clinic reveals only forty-eight such cases. From the standpoint of the patient the disease is of utmost and paramount concern, however, as it is most distressing and incapacitating. This may be attributable to the fact that this symptom predominantly affects people whose threshold for pain is relatively low. Because of the extreme distress incident to the condition, because of the inadequacy in coping with it, and to stimulate interest in the subject, an attempt has been made to determine, if possible, some of the factors in its etiology and the means by which some patients have obtained relief, as well as any other information pertinent to the problem.

When one attempts by a perusal of the literature to obtain some knowledge of this subject, one is struck by the paucity of material. Oppenheim [1] in his textbook of nervous diseases devotes only a small paragraph to the condition. Throughout the literature a like neglect is evident. Many articles purporting to consider diseases of the tongue make no mention of the various functional disorders. This is not surprising, of course, since neurologic diseases in general are looked on with indifference by many members of the medical profession.

Among the earliest references to glossodynia were those of Buisson [2] in 1854, Schwimmer [3] in 1886 and Magitot [4] in 1887. Butlin and Spencer [5] in their epochal work on the diseases of the tongue devoted considerable space to this disorder and mentioned as the causes (1) a neuropathic disposition, (2) dyspepsia or a gouty diathesis, and (3) infection producing reflex burning or pain. Oppenheim gave the best consideration from the neurologist's point of view; he described the disease as

> paresthesia, particularly a burning and prickling sensation on the tongue extending perhaps to adjacent membranes. It may be continuous, paroxysmal, and may even disturb the sleep. It has been observed particularly in women of advanced age but is not very common. The teeth were almost always absent; a neuropathic predisposition is generally present; a gouty diathesis may also tend to cause it; cancerophobia is often present. Often it cannot be decided, however, whether hypochondriasis evoked the paresthesias or vice versa. Nothing is found on examination. It is a persistent disorder and may be an initial symptom of tabes dorsalis and of dementia paralytica. Similar disorders may occur elsewhere. I observed a urethrodynia in one of my patients. Glossodynia should not be confused with xerostomia. The treatment is a psychic one. Local treatment by cocaine, silver nitrate and so on may be recommended. Electricity may also be tried.

Sluder [6] in 1918 offered the opinion that lingual tonsillitis plays a causative part in painful tongue or glossodynia. Dean [7] in 1922 and Sluder [8] in 1923 wrote of the relief of the disease by cocainization of the nasal, sphenopalatine or Meckel's ganglion. Dean's patient was apparently permanently relieved by injection of 95 per cent alcohol with 5 per cent phenol into the ganglion.

Engman [9] in 1920, in reporting a group of twelve cases, attributed the symptom to a fear of carcinoma. All his patients were considered to be psychoneurotic and all of them had an intense fear of carcinoma. His therapeutic suggestion was contained in one word, "reassurance."

Beall [10] in 1922 reported four cases in which he felt that the condition was dependent on faulty diet. Two of these patients recovered when milk, cream and meats were added to their diets. He raised the question as to whether these were cases of early pellagra and he also felt that the condition was the result of a diet poor in protein. In the discussion of his paper, mention was made of relief obtained in two cases by the administration of hydrochloric acid and in three others by the administration of alkali.

McPhedran [11] in 1927 reported six cases of glossodynia. In four of these cases the patients were past the menopause, and all his patients were of a nervous temperament. All had had repeated serious illnesses and half of them also had undergone major operations. All presented themselves because of lingual symptoms. In none of these cases could there be found anything objective on examination. All were living under high nervous tension and reported that excitement, worry and loss of sleep accentuated their discomfort. Any improvement seemed to result from improvement in general health.

Marshall [12] in 1928 drew attention to the papillae foliatae, a row of small vertical projections of mucosa

24. Boe, H. W.: Hemiatrophia Facialis Progressiva Treated with an Expansion Appliance in the Oral Cavity, J. Am. Dent. A. **20**: 2102 (Nov.) 1933.

1. Oppenheim, Hermann: Lehrbuch der Nervenkrankheiten, Berlin, S. Karger, 1913.

2. Buisson, quoted by Butlin and Spencer.[5]

3. Schwimmer, E. L.: Beiträge zur Glossopathologie, Wien. med. Wchnschr. **36**: 337, 1886.

4. Magitot, E.-J.: De la glossodynie; glossalgie (Breschat); rheumatisme musculaire de la langue; névalgie linguale; ulcérations imaginaires de la langue (Verneuil), Gaz. hebd. de méd. **24**: 788-791, 1887.

5. Butlin, H. T., and Spencer, W. G.: Diseases of the Tongue, New York, Cassell & Co., Ltd., 1900, pp. 410-411.

6. Sluder, Greenfield: Some Clinical Observations on the Lingual Tonsil Concerning Goiter, Glossodynia and Focal Infection, Am. J. M. Sc. **156**: 248-252 (Aug.) 1918.

7. Dean, L. W.: The Control of Glossodynia Through Nasal (Sphenopalatine or Meckel's) Ganglion, abstr. South. M. J. **15**: 856 (Oct.) 1922.

8. Sluder, Greenfield: A Case of Glossodynia with Lingual Tonsillitis as Its Etiology; Control Through the Nasal Ganglion, J. A. M. A. **81**: 115 (July 14) 1923.

9. Engman, M. F.: Burning Tongue, Arch. Dermat. & Syph. **1**: 137-138 (Feb.) 1920.

10. Beall, K. H.: Glossopyrosis, South. M. J. **15**: 272-274 (April) 1922.

11. McPhedran, H.: Glossodynia, St. Michael's Hosp. M. Bull. **3**: 59-64 (June) 1927.

12. Marshall, C. J.: The Papillae Foliatae and Carcinophobia, abstr. Brit. M. J. **2**: 13 (July 7) 1928.

on the sides of the tongue immediately anterior to the attachment of the palatoglossal folds. These, he said, have no pathologic significance and yet, when discovered by the patient, may cause grave worry.

Sellei [13] in 1928 commented on cases in which burning tongue was associated with hyperacidity. He recommended alkalis and a suitable diet as the proper treatment. He postulated that the burning is a reflex from the stomach, by way of the vagus nerve to its nucleus in the floor of the fourth ventricle, and thence to the nucleus of the trigeminal nerve and down the latter nerve to the tongue.

Morelli [14] in 1929 confirmed Sellei's observations and called attention again to the relief incident to alkaline and dietary therapy. He confirmed also a further observation by Sellei that, by producing a moderate hyperacidity, he could bring on the symptom of burning tongue and likewise relieve it by the administration of alkalis and by regulation of the diet.

Michael [15] in 1931 again called attention to the cancerophobia that is "usually present." He found the pain to be constant or inconstant, as the case might be, with a duration varying between months and years, and with periods of freedom for as long as several months. As to etiology, he mentioned, first, a psychoneurosis; second, local causes, such as artificial dentures; third, hypo-acidity or hyperacidity; and, fourth, pernicious anemia. He felt that local applications are of little avail. In the discussion of this paper, mention was made of myxedema as another cause of burning tongue.

Montgomery and Culver [16] in 1932 found that the date of onset is usually not known. They found also that in half of their thirty-two cases a change of appearance in the tongue was noted at the site of burning; that is, the papillae were enlarged and reddened or purple. Their patients characteristically drew attention to this change. These writers mentioned reflex causes from the digestive tract, tonsils and teeth; mechanical causes from rough teeth; the effects of sweets and fruits, and the abuse of the use of tea or coffee as possible etiologic factors. They felt that smoking had no effect.

As had been mentioned previously, this group of patients seen at the clinic numbered forty-eight. As others have found, the majority of sufferers were women; thirty-seven of the forty-eight patients seen at the clinic were women. Of the whole group, thirty-five, or nearly three fourths, were more than 50 years of age. The average age of the whole group was 54.3 years. The ages of the male patients varied between 27 and 73 years, and the ages of the female patients varied between 20 and 72 years. There was a larger percentage of the female patients in the upper age group than the opposite sex showed.

Because one or two writers have felt that there was some connection between migraine and glossodynia, I have attempted to determine the incidence of the former disease in this group of cases. Only ten of the forty-eight patients, or, roughly slightly more than a fifth of the group, gave a history of migraine. At first glance this is a seemingly low incidence, as the proportion of individuals in the general population who suffer from migraine is considerably greater. When one considers, however, that nearly 75 per cent of the patients in this series of cases were past 50 years of age, the seeming discrepancy is understandable for, as is well known, migraine tends to disappear after the age of 50 years. No connection, therefore, could be determined between these two conditions.

Another factor which it seemed reasonable to suppose might be a powerful etiologic agent is that form of mental disturbance known as depression. The frequency with which patients suffering from affective disorders are liable to be hypochondriac and to suffer from somatic delusions made this supposition sound very tenable. It was interesting, therefore, to note that only five of the forty-eight patients could reasonably be classified as being depressed; nevertheless, the incidence of mental depression is higher among those who suffer from glossodynia than it is among the general population.

As one goes over the history of cases in which glossodynia has been the diagnosis one obtains the impression that, in addition to the fact that the patients are generally individuals who are well up in years, some of these patients have signs of definite sclerosis of the cerebral vessels. This is an impression which also has been gained by many neurologists of wide experience. In eleven of these forty-eight cases there was evidence of arteriosclerosis of the central nervous system. Here again, therefore, is another possible factor in the production of glossodynia.

As mentioned previously, certain writers have felt that there is a connection between the gastric acidity and glossodynia. In the sixteen cases in which gastric analysis was performed, the values for the gastric acidity were normal. In five other cases the values for the free hydrochloric acid in the stomach varied from 8 to 16, according to the method of Töpfer. Anacidity was present in only three cases, and in only one of these cases was there any anemia whatever. This was the result of an extensive carcinoma of the stomach. Four years after examination another patient, who had achlorhydria, reported that the burning was still present but that many other symptoms, which included burning in the rectum and vagina, had abated. There was no reason, therefore, to think that pernicious anemia had developed. In the third case, in which hydrochloric acid was absent from the gastric secretion, the patient reported two years after her first visit to the clinic that her tongue was no better. She failed to mention any other symptoms present at the time of writing the letter. It is needless to say that the appearance of the tongue is widely different in glossodynia and in pernicious anemia.

Cancerophobia has been indicted by one writer as the cause of glossodynia. It so happened that this fear was present in all of his twelve cases. A comparable relationship was not found in the group of cases under consideration. Only eight of the forty-eight patients expressed this fear, which in some cases amounted to a phobia, and it is difficult to determine whether this fear or the burning came first; a few seemingly had acquired the burning first. One of these also had a dread of pellagra. Two patients had a fear of syphilis, which played a very active part in their histories. This small incidence of patients who have the intense fear of carcinoma known as cancerophobia is worthy of emphasis. Most of the writers comment on the extremely high percentages of individuals so afflicted.

Another point, which most writers have felt worthy of mention, is the condition of the teeth. Most patients

13. Sellei, Josef: Durch Hyperaziditäte verursachtes Zungenbrennen, Deutsche med. Wchnschr. **2**: 1758-1759 (Oct. 19) 1928.
14. Morelli, Gustav: Reflectorische Ueberempfindlichkeit der Zunge (Hyperaestesia reflectorica linguae), abstr. Zentralbl. f. Haut.- u. Geschlechtskr. **29**: 309, 1929.
15. Michael, J. C.: Burning Tongue, Texas State J. Med. **27**: 304-308 (Aug.) 1931.
16. Montgomery, D. W., and Culver, G. D.: Painful Tongue, Arch. Dermat. & Syph. **26**: 474-477 (Sept.) 1932.

whose tongue, palate or mucous membranes are the seat of a burning discomfort have, of course, had their teeth examined. As so often happens in other conditions, doctors and dentists advise extraction rather frequently on empirical grounds in these cases. Consequently, it was not surprising that of the forty-eight patients in this series twenty had lost all or many of their teeth. Twelve of the twenty were completely edentulous. Twenty-one still retained the dentures with which nature provided them. In seven cases no record of dental examination was noted.

I will now consider what is perhaps the most significant aspect of this discussion; namely, the neuropathic predisposition. Thirty-seven of the forty-eight patients complained of various functional disorders, in addition to the glossodynia. When a physician designates a symptom as functional, he lays himself open to a possible considerable amount of criticism. He is especially vulnerable because such an opinion is founded on his interpretation of symptoms voiced by the patient whose understanding of the same words may be entirely different. This is especially true when symptoms are vague and hard to describe. Be that as it may, it is assumed and maintained, although with not too great certainty, that thirty-seven of the group were psychoneurotic individuals whose many and varied symptoms classified them as such from the outset. These other neurotic symptoms included burning of the legs, continuous headache, a drawing sensation from the stomach to the rectum, continuous pain in the cheek, generalized aching of long duration, burning in the vagina and rectum, a feeling as of a lump in the throat, discomfort in one apparently normal tonsil, and the taste of pus in the throat. Gastro-intestinal symptoms, presumably functional, also should be mentioned with this group.

Perhaps one of the best evidences of the fact that glossodynia is a psychoneurotic manifestation is the way in which some of the patients report that they received relief from their distress. One woman, while still at the clinic, received treatment for varicose veins. She had had a bitter taste, and burning in her mouth, tongue, pharynx and nose, for two and a half years. When the doctor injected a drug into one of her veins, she said that she collapsed and feared that she was "gone." The doctor then injected something in her arm and she recovered. By the time she reached her hotel room, the burning in her tongue was gone and at the time that she replied to our letter of inquiry, two years following her visit to the clinic, she still had had no return of the glossodynia.

Another patient reported that no physician had been able to help her. She, however, finally hit on the scheme of chewing spruce gum, for which she sent half way across the country. This form of therapy, surprisingly enough, resulted in complete relief of her pain. These instances, it seems, are fairly strong evidence that suggestion was the significant factor in the treatment and, as such, could only have resulted in relief of a condition which was psychogenic in origin.

Through subsequent visits to the clinic or letters of inquiry, it was possible to learn further about the course of the disease in twenty-five cases. Of the twenty-five cases, complete recovery was reported in eight. Five other patients felt that they were somewhat better than they had been. Three others had found that they had discovered the cause of their discomfort. Thus, one man reported that as long as he refrained from smoking he had no burning; another patient, a woman, could avoid the burning by excluding starches from her diet. Still another woman had found that by eliminating strawberries, rhubarb, pineapple and highly seasoned foods she, too, was free from the pain. The rationale of this is none too clear, since the glossodynia had been continuous. In nine of the twenty-five the condition was either worse or not better. One of the patients had experienced relief following the extraction of her upper teeth. Another found that by holding some chewing gum or a piece of slippery elm bark in her mouth she could obtain partial abatement. Still another individual, on a subsequent visit to the clinic, made no mention of the burning, and this apparent recovery was perhaps the result of the fact that a pain in the face, which she had complained of coincident with the burning tongue, had become worse. It was therefore probably a case of the one distress overcoming perception of the other. One patient, on a second visit to the clinic, reported that a chiropractor had relieved her burning tongue. Several apparently improved without any treatment except reassurance, encouragement and the passing of time.

As to the duration of this condition, the figures in this group are somewhat unreliable for the reason that, as Oppenheim has pointed out, the date of onset is rather vague in the minds of most of these people. In only eight of these cases could the duration be even approximated. The longest duration was nineteen years and the shortest two years. In five of the eight cases the condition had been present approximately two years.

Finally, it should be emphasized that in none of these cases were there found any local or general positive physical manifestations except for an occasional bad tooth and achlorhydria, which was present in three cases. The burning in this series involved the tongue and the mucous membrane of the mouth, cheeks, lips, pharynx, palate and even of the nose. The discomfort included not only burning but such sensations as a metallic or bitter taste in the mouth, prickling, sticking, an acid taste, and a feeling as if a hot iron had been placed on the parts affected.

SUMMARY AND CONCLUSIONS

The following points seem worthy of final iteration: More women are affected than men, and the disease has its onset more frequently beyond the age of 50 years. There is a high incidence of other psychoneurotic symptoms accompanying this manifestation. A fair proportion of patients also suffer from arteriosclerosis of the central nervous system and a small proportion suffer from depression coincidental with this burning, painful tongue. Cancerophobia is present in a few cases. The teeth have been removed in approximately half of these sufferers. Complete relief may be expected in about a third of such cases and partial relief may be expected in another third. Relief may result from various forms of psychotherapy alone, as local treatment apparently is of no avail.

The Common Eel.—The common eel of our rivers has its spawning groups in the Atlantic Ocean near Bermuda. Here the eggs are deposited and the young eels hatch and must then swim all the way back to the U. S. to grow up. European eels of the closely related species also visit nearly the same locality to spawn. But somehow the young of the two species sort themselves out—the young of the American species requiring a year to reach home shores, and the other requiring three years to reach England and France.—Bell, F. T.: Fish and Their Management, *Talks* **1**:32 (April) 1936.

OXYGENATION IN RELAPSING AMEBIASIS

REPORT OF CASE

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Though it is a solitary instance, I believe this case presents several features which make its reporting incumbent on me. That amebiasis is a protracted and recalcitrant malady is of negative concern to this discussion, but when recrudescence occurs after a period of veritable clinical arrest the condition assumes a coercive character, calling for a most exhaustive therapeutic armamentarium.

An incidence of only fifty-five cases of amebic dysentery in the population of New York City of more than seven million is insignificant, but a death rate of five out of these fifty-five cases is too high to escape attention. I am of the opinion that it is the delay in proper diagnostic approach which is conducive to ineffective therapy when diagnosis is finally established. When confronted with a doubtful case of mucous colitis, one should treat for amebiasis until the condition is proved otherwise. It is likely that the favorable result reported from the use of antiamebic agents in cases of mucous colitis have occurred in patients who had an undiagnosed amebic infestation. Delay in diagnosis is synonymous, in most cases, with delay in therapy, an accentuated aggression of Endamoeba hystolytica on the intestinal mucosa, and a host depleted of vigor in a vain effort to combat a harmful dweller in the colonic tract.

The salient points in this case are as follows:

A. S., a woman, aged 26, single, was admitted to the hospital Jan. 5, 1935, with a diagnosis of hemorrhagic colitis.

The history pertaining to a bowel syndrome dated back to April 1934, when its three months' duration was marked by an elimination frequency of from six to seven times a day. The sanguineous stools were ascribed to the old popular diagnosis of "bleeding piles." A lull in symptomatology followed, but after several months diarrhea recurred. Loss in weight, secondary anemia and asthenia dominated the clinical picture. Nonspecific therapy without clinical amelioration effected her hospitalization. Repeated examinations of the feces revealed the ameba in vegetative and cystic forms.

The conventional specific treatment was instituted. Emetine, injected intramuscularly, was in the vanguard, alternating with arsenicals and iodochlorhydroxyquinoline, properly spaced. The response was spectacular. The patient was discharged symptom free, March 8. Careful observation and amebicidal therapy were continued. The patient had enjoyed splendid health, when out of a clear sky in the latter part of May the bowel symptom returned in all severity. Acute, fulminating "diarrhea gravis" was a pertinent and descriptive term for the condition. Proper spacing of arsenicals brought no results. The administration of powdered ipecac root in the form of enteric coated capsules, with at least 40 grains (2.6 Gm.) being brought into play at one time, was discontinued because of marked nausea unaccompanied by evidence of efficacy. The patient took a downward course. Two blood transfusions were given with but meager improvement in the general condition. Surgical intervention was hesitantly considered.

At this phase of an obdurate malady I analyzed the facts of the history as follows: With the second admission to the hospital the case was considered as a relapsing stage of chronic amebic dysentery. Diagnosis in such cases, in the absence of live motile parasites, is made from the resting or cystic forms. Wet stool specimens disclosed no amebas, but cysts were found. The conventional therapy, properly spaced, was administered with a progressively worse response on the part of the patient, who was literally cemented to the bed pan. The dominating picture consisted of true anorexia, progressive asthenia and gross emaciation. Depleted resistance was added to a syndrome of nervous depression, resignation and episodes of crying spells.

Amebic hepatitis and amebic abscess were ruled out. Tenderness in the right lower part of the abdomen with no soreness elicited over the liver region suggested a feeding focus of amebic infection. Exploratory laparotomy was suggested in a "nothing-to-be-lost" attitude. Repeated search for tuberculosis and bacillary dysentery yielded negative results. Microscopy of the biliary aspirates (Meltzer-Lyon method) disclosed rare pus cells, a moderate number of red blood cells, many squamous and cuboidal cells, but no amebas. The patient went through this test heroically in hopes of obtaining relief. I was convinced of the inadvisability of repeating the procedure in this case, and questioned the possibility of an anaerobic spore-bearing organism's being the enemy.

A proctoscopic examination brought into view a classic ulcerative picture with profuse bleeding. A barium sulfate suspension enema revealed "ulcerative colitis and ileocecal incompetence." With the patient sinking rapidly there was no time for culture study of feces in an effort to establish fine, precisional diagnosis. Empirical therapy, like exploratory laparatomy when diagnosis is obscure, was urgently called for and instituted.

TREATMENT

High regard must be given to Dr. Joseph Felsen [1] for his splendid presentation concerning the use of colonic irrigation with strong oxidizing agents. It occurred to him that "perhaps pure oxygen in amounts sufficient to alter materially the gaseous tension in the intestines might prove more effective and less distressing than the fluid irrigations." The results he obtained by the use of oxygen in idiopathic ulcerative colitis were encouraging. The case under discussion did not come within the definition of the syndrome of idiopathic ulcerative colitis because the parisitology had been well established. We were confronted, however, with a mucopurulent sanguineous exudate in a case of relapsing amebiasis that proved recalcitrant to a varied and specific therapy. Under such circumstances, the end result of pathogenesis deserved all attention—an ulcerative colitis calls for treatment. Colonic irrigation with various amebicidal agents was not only working great hardship on a weary and exhausted patient but had brought about a prolapse of the rectum which occluded the anal ring. All attention was focused on reducing the marked edema of a protruding vulnerable mucosa. Except for symptomatic therapy, all amebicidal agents were discontinued. Careful analysis of the case justified my conclusion that I was dealing with a case of symbiosis of a pathogenic anaerobic micro-organism with a harmful parasite. Paulson [2] asserts, anent ulcerative colitis, that the term idiopathic precludes the presence of pathogenic parasites. "Yet," he writes, "the simultaneous appearance of amebic dysentery and ulcerative colitis has been claimed to occur as distinct entities in some cases by virtue of the concomitant occurrence of three conditions: (1) the isolation of E. histolytica, (2) the feeling that the etiology of ulcerative colitis has been ascertained, and (3) the presence of types of ulceration seen by rectosigmoidoscopy said to be characteristic for each of these conditions." He reasons, ". . . it would seem to be in error to deviate from the accepted teaching, namely, that the infection by E. histolytica be regarded as primary and the involvement of ulcerative colitis as secondary."

The case under discussion presents proof of priority of disorder in the two roentgenologic studies of the colon. During the first attack in January 1935 the

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1. Felsen, Joseph: Intestinal Oxygenation in Idiopathic Ulcerative Colitis, Arch. Int. Med. **48**: 786 (Nov.) 1931.
2. Paulson, Moses: The Present Status of Idiopathic Ulcerative Colitis, J. A. M. A. **101**: 1687 (Nov. 25) 1933.

report read "marked spastic colitis" and in August 1935 "ulcerative colitis." Examination of the roentgenograms gave undebatable evidence of primacy of diseases, namely, the infection by Endamoeba histolytica as primary and the involvement of ulcerative colitis as secondary. Kiefer's [3] study of forty cases of ulcerative colitis is in agreement with Paulson's contention. Kiefer found that 74 per cent of the cases showed a positive Craig test for Endamoeba histolytica, and in many of these cases antiamebic treatment yielded favorable results. It is conceivable that the success of ipecac therapy in mucous colitis may have occurred in patients afflicted with unrecognized amebic infection. Paulson is right in his assertion that "etiology and therapy should not be confounded clinically." The art of medicine must often be separated from the science of medicine, and the therapy chosen must be that of most efficiency, regardless of etiology. Ileotomy was considered, but the condition of the patient made such intervention extremely inadvisable. Further, while acute septic symptoms might be relieved, the damaged colon would not regenerate. I therefore chose to treat the case as a secondary ulcerative colitis, based on a mucosa made vulnerable by the ameba, an environment in which even normal colonic dwellers, saprophytes, become virulent and pathogenic.

I feared to administer the recommended dosage of oxygen ("seven hours of oxygen per day administered every other hour between 8 a. m. and 9 p. m. provided a gaseous content of approximately 1,750 cc., or almost 2 liters" [1]) because the ulcerated areas and copious oozing of blood indicated danger of perforation. We commenced with a dosage clinically comfortable to the patient (shown in the accompanying table) given in alternate hours between 8 a. m. and 8 p. m. Nocturnal administration of castor oil enabled better toleration of the distention caused by the incoming oxygen. No belching was noted. The expulsion of débris, mucus and coagulated blood from the wall of the intestine permitted ready access to the incoming oxygen. No rule as to the duration of oxygenation could be observed, however, dosage and frequency being governed by tolerance of the patient.

The response to oxygenation was spectacular. The patient's appetite assumed an avaricious aspect. In addition to a liberal tray she enjoyed large sandwiches brought by her mother—an act of devotion which was detected and allowed. It is interesting to note that the red cell sedimentation rate receded from 31 mm. to 19 mm. for thirty minutes. Her markedly dehydrated clinical picture improved rapidly. This, of course, might be attributed to intravenous administration of 5 per cent dextrose in physiologic solution of sodium chloride. This therapy is synergestic, but dextrose did not destroy the pathogenic micro-organisms. A heavily coated tongue and offensive breath cleared, bowel movements became fewer, and improvement in the patient's general condition was marked. Hydrochloric acid therapy was instituted long before gastric analysis revealed an achlorhydria, on the principle that an inhibited gastric secretion is part and parcel of general debility. The hydrochloric acid was not administered as an antiamebic. The ameba passes through the stomach uninjured by free hydrochloric acid. But a basic part of antiamebic therapy is the strengthening of the general condition of the patient. As a high caloric diet calls for a high hydrochloric acid value, and, as noted, general debility implies low hydrochloric acid or achlorhydria, administration of hydrochloric acid, following a gastric contents test, is indicated in amebiasis.

The patient was discharged from the hospital Aug. 17, 1935, and was placed on vioform.

Oxygenation Administered

Date	Minutes	Bubbles per Minute
July 23, 1935.....	160	20
July 24, 1935.....	160	20
July 25, 1935.....	240	40
July 26, 1935.....	120	20
July 27, 1935.....	180	20
July 28, 1935.....	180	20
July 29, 1935.....	240	20
Total: 21.33 hours		Approximately 6⅓ liters

3. Kiefer, E. D.: The Craig Complement Fixation Test for Amebiasis in Chronic Ulcerative Colitis, Am. J. M. Sc. **183**: 624 (May) 1932.

CONCLUSION

A solitary case does not permit the drawing of a definite conclusion. The facts are here presented. The favorable results derived from oxygenation in a justly labeled "colitis gravis" stemming from amebiasis warrant its report. If those who are confronted with similar cases employ colonic oxygenation, case reports and series studies will give cumulative evidence of its therapeutic effectiveness. Survey of the literature disclosed no reference to colonic oxygenation in amebiasis.

Unfortunately the vagaries of the patient's family have prevented a close follow up. The main argument of this report, however, is not that a cure was obtained but that development from tumult to quiescence was achieved by harmless oxygenation of the colonic tract.

118 West Seventy-Ninth Street.

Clinical Notes, Suggestions and New Instruments

BRADYCARDIA DUE TO SPONTANEOUS HYPOGLYCEMIA: REPORT OF A CASE

ALEXANDER PIERCE ORMOND, M.D., AKRON, OHIO

The cardiac response seen most commonly with hypoglycemia is an increase in the ventricular rate and in the minute volume.[1] Various degrees of tachycardia are seen quite commonly both in patients who have received an overdose of insulin and in patients with spontaneous hypoglycemia. Harris [2] reports a rather extreme example. His patient at times had a cardiac rate of 200 beats per minute. During one bout of tachycardia it was discovered that her blood dextrose was 56 mg. per hundred cubic centimeters. Administration of dextrose raised the blood dextrose to 84 mg. per hundred cubic centimeters and at the same time dropped her heart rate to normal.

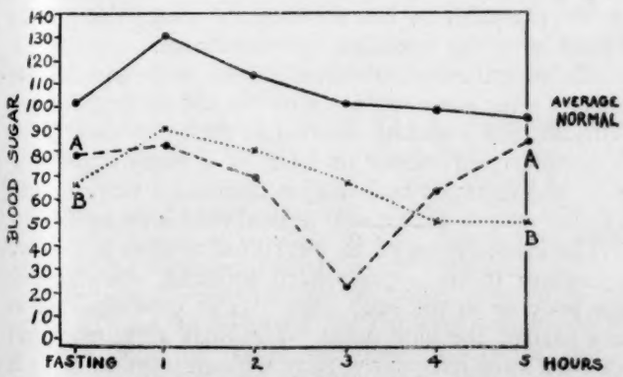
I have not been able to find in the literature any reference to the occurrence of bradycardia with hypoglycemia. Harris [3] stated that, although he had not observed bradycardia with spontaneous hypoglycemia, he did recall one diabetic patient in whom bradycardia followed insulin overdosage.

REPORT OF CASE

J. A. F., a man, aged 27, had rather frequent colds, and a sore throat every winter until 1929. He had influenza in 1918. Otherwise he had remained well until 1930, when he had two attacks of stomach trouble lasting several weeks. In September 1931 he had a more severe attack and sought the advice of a physician. These attacks were characterized by sour stomach, "heartburn" and the belching of gas, beginning about two hours after meals. There was no pain or nausea. He was examined thoroughly, but nothing unusual was found. Gastro-intestinal x-ray studies showed nothing abnormal except the appendix,

1. Ernstene, A. C., and Altschule, M. D.: Effect of Insulin Hypoglycemia on Circulation, J. Clin. Investigation **10**: 521-528 (Aug.) 1931.
2. Harris, Seale: Clinical Types of Hyperinsulinism, Am. J. Digest. Dis. & Nutrition **1**: 562-569 (Oct.) 1934.
3. Harris, Seale: Personal communication to the author, June 12, 1935.

which was kinked, somewhat enlarged at the tip, and remained filled at the end of seventy-two hours. The patient stated to me that at this same time he became weak and nervous toward the end of his day's work; his heart fluttered, raced and sometimes seemed irregular in rhythm; and he had several fainting attacks but never bit his tongue. He refused appendectomy, quit his job as clerk in a grocery store, and went to his father's farm. Within two months the symptoms had disappeared and after six months he resumed his work, remaining well for nearly three years. Dec. 15, 1934, he began to have epigastric distress, with burning, gnawing and "gas" occurring three or four hours after meals. Relief could be obtained by taking food or sodium bicarbonate. Dec. 29, 1934, while at work, he had pain in the right lower quadrant of the abdomen. Dr. H. V. Sharp examined him at home, finding some tenderness in the epigastrium and in the right lower quadrant. The temperature was 98.4 F. There was no rigidity, nausea, vomiting or abnormality of bowel action. Rectal examination revealed no tenderness. Because the conditions found were atypical and the history resembled that of peptic ulcer, a modified Sippy regimen was prescribed, and the next day all abdominal distress and tenderness had disappeared. Jan. 5, 1935, while at work, the patient had a sinking spell and felt faint. When examined, the abdomen apparently was normal but the pulse rate was only 42 per minute. At this time I was called because of the bradycardia. The patient was 66 inches (168 cm.) tall, weighed 128 pounds (58 Kg.), was well nourished and was apparently normal except for infected tonsils, slight internal strabismus of the left eye, and a bradycardia of 43 per minute. The heart size and sounds were normal. The blood pressure in millimeters of mercury was 115 systolic, 70 diastolic. The attempt to sit erect caused him to become faint, but he was weak, nervous and apprehensive even when lying down. He volunteered the theory that his "nerves upset him." Because of the history of nervousness and fainting, relieved by the taking of food, I suspected hypoglycemia and prescribed one tablespoonful of Karo syrup with each feeding of milk and cream. It was not possible to hospitalize him. Two days later, when seen at my office, he was enthusiastic about his recovery, stating that he felt better than he had been feeling in months. The pulse rate was 72 per minute; the blood pressure was 122 systolic, 75 diastolic. He performed the stair-climbing test (twenty-seven trips over two steps, each 9 inches high, in ninety seconds) without the slightest evidence of distress or faintness. At the end of this



Dextrose tolerance: *A*, January 15; *B*, July 5.

exercise the blood pressure was 160 systolic, 90 diastolic, and the pulse rate 80 per minute. After one minute, the blood pressure was 135 systolic, 90 diastolic, pulse rate 80; after two minutes, the blood pressure was 122 systolic, 80 diastolic, pulse rate 76. This exercise did not bring out any abnormality of the heart sounds, and the results indicate an apparently normal myocardium. The blood count and urine analysis were normal. The blood Wassermann and Kahn reactions were negative. Jan. 15, 1935, Dr. F. C. Potter performed a dextrose tolerance test, using 1.75 Gm. of dextrose per kilogram of body weight (curve *A* on the chart). The Folin and Wu method of blood dextrose determination was used. The third hour value of 21 mg. per hundred cubic centimeters was checked because of the unusually low reading and was found to be correct. At that hour the patient complained of feeling very faint, but his pulse rate was normal. An electrocardiogram, taken when his pulse rate was 53 per minute, showed no evidence of myocardial damage or abnormalities of rhythm. The PR interval was at the upper limit of normal, 0.20 second.

A diagnosis of hyperinsulinism was made, the Sippy regimen was discontinued, and the patient was placed on a diet composed of protein 60 Gm., carbohydrate 120 Gm. and fat 150 Gm. daily, divided into six feedings. He also was given phenobarbital one-fourth grain (0.016 Gm.) every four hours. On this regimen the abdominal distress did not return, there was

Dextrose Tolerance Test, January 15

Fasting blood sugar	78 mg. per 100 cc.
First hour	81 mg. per 100 cc.
Second hour	68 mg. per 100 cc.
Third hour	21 mg. per 100 cc.
Fourth hour	62 mg. per 100 cc.
Fifth hour	84 mg. per 100 cc.

Dextrose Tolerance Test, July 5

Fasting blood sugar	67 mg. per 100 cc.
First hour	90 mg. per 100 cc.
Second hour	80 mg. per 100 cc.
Third hour	67 mg. per 100 cc.
Fourth hour	50 mg. per 100 cc.
Fifth hour	50 mg. per 100 cc.
Sixth hour	50 mg. per 100 cc.

no cardiac abnormality, and the patient felt perfectly well except under unusual stress of work or worry. Because of the emotional strain connected with his job, in May 1935 he returned to the farm near Birmingham, Ala. I referred him to Dr. Seale Harris,[4] who wrote: "The patient is greatly improved since going on the diet, and came in to see me just because you told him to come." A dextrose tolerance test was made by Dr. Harris (curve *B* on the chart). The pulse rate was 72 per minute. The basal metabolic rate was plus 18 per cent. Dr. Harris believes that hypopituitarism may be a factor in his case because of a decline in the patient's sexual powers. The patient wrote me Oct. 6, 1935, that he is working again and said "I am following the diet carefully and am glad to say that I am steadily improving and can hold out to do my work real good."

COMMENT

This patient probably had an attack of hypoglycemia in 1931, with spontaneous recovery from his symptoms. During that attack he had indigestion, tachycardia and possibly also extrasystoles. His second attack, three years later, was characterized by abdominal distress simulating that of duodenal ulcer, by weakness, by nervousness and by bradycardia.

The cause of this bradycardia is purely speculative. Cannon, McIver and Bliss[5] in 1924, working on cats with denervated hearts, concluded that the increase in heart rate during hypoglycemia resulted from a discharge of epinephrine by the adrenal glands, in response to some sympathetic stimulation. Ernstene, Riseman, Stern and Alexander[6] in 1935 found also an increased cardiac output, apparently due to the same mechanism. However, when the adrenals were inactivated, the cardiac minute volume decreased and they concluded that hypoglycemia per se has a deleterious effect on the myocardium. Dworkin[7] in 1931, working with unanesthetized, intact cats, demonstrated that hypoglycemia causes central vagus stimulation as well as sympathico-adrenal excitation, the antagonism of these two effects maintaining a relatively constant heart rate.

4. Harris, Seale: Personal communication to the author, July 8, 1935.
5. Cannon, W. B.; McIver, M. A., and Bliss, S. W.: Studies on Conditions of Activity in Endocrine Glands: Sympathetic and Adrenal Mechanism for Mobilizing Sugar in Hypoglycemia, Am. J. Physiol. **69**: 46-66 (June) 1924.
6. Ernstene, A. C.; Riseman, J. E. F.; Stern, B., and Alexander, B.: Mechanism of Circulatory Changes Accompanying Insulin Hypoglycemia, Am. J. Physiol. **111**: 440-447 (March) 1935.
7. Dworkin, Simon: Insulin and Heart Rate After Sympathectomy and Vagotomy, Am. J. Physiol. **96**: 311-320 (Feb.) 1931.

When the patient omitted just one meal there was no decrease in the cardiac rate, but he would have hypoglycemic symptoms consisting principally of nervousness and fatigue for about two hours, followed by a return of euphoria. Inspection of his dextrose tolerance test (curve *A*) shows the reason: near the third hour, when the blood dextrose was low, hepatic glycogenolysis, which the Coris and Buchwald[8] have shown is due to an increased epinephrine secretion, raised the blood dextrose at least temporarily. In order to decrease the heart rate for the purpose of making the electrocardiogram, it was necessary that he refrain completely from carbohydrates for thirty-six hours. During that period he felt constantly miserable, weak and nervous. It is possible that the store of glycogen in the liver was lowered by this starvation to a point at which there could be no increase of blood dextrose from that source, a state of constant hypoglycemia being the result. It is possible also that this constant hypoglycemia caused an overstimulation of the adrenals, with eventual relative exhaustion of the supply of epinephrine. A combination of central vagus stimulation with myocardial depression due to the hypoglycemia evidently overbalanced the antagonistic sympathico-adrenal effect, bradycardia being the result. Theoretically this may have been due to a lowered output of epinephrine.

716 Second National Building.

VIABILITY OF SPERMATOZOA IN THE CERVICAL CANAL: PRELIMINARY REPORT

FRANCES I. SEYMOUR, M.D., NEW YORK

This is the report of an interesting observation that I made on the viability of a specimen of semen obtained from a donor and introduced into the cervical canal of five different patients on the same day by means of a cannula.

It is interesting because a great deal of work has been done on the p_H of cervical secretions, and the variation of the p_H in the cervical canal. I refer to cases other than those infected with such conditions as gonorrhea, confining my reference to these five cases presenting normal healthy cervices.

Dec. 10, 1935, five patients were artificially inseminated from one donor. The semen was deposited by a cannula against the internal os. The uterus was not entered and very little pressure was used during insertion so as to avoid any forcible opening of the internal os. In cases 1 and 2 there were large cervical plugs of mucus presenting at the external os. These were left in situ. The cannula was introduced between the cervical plug and the cervical wall. A tenaculum forceps was used to straighten the canal. About 0.1 cc. was used in each case after the specimen had been well shaken. Daily examinations were made of all five patients and a sterile earloop,

State of Viability of Spermatozoa in Five Cases of Artificial Insemination

Case	Dec. 10	Dec. 11	Dec. 13	Dec. 14	Pregnancy Obtained
No. of Hrs.	3	45	90	110	
1	Very active	Dead	.....	.....	Pregnant
2	Very active	Sluggish	Sluggish	Dead	Pregnant
3	Dead	.....	.....	.....	None
4	Very active	Active	Sluggish	Sluggish	Pregnant
5	Sluggish	Sluggish	Dead	Dead	None

small size, was introduced and withdrawn and the fluid examined microscopically. The observations are recorded in the accompanying table.

The pregnancies were ascertained by the Friedman test in conjunction with the usual examination and symptomatology.

These inseminations were made on the twelfth day after and including the first day of the patient's period, so that in case 4 the spermatozoa were still alive on the sixteenth day.

Patients 3 and 4 had been inseminated the previous month with semen from a different donor, which had not caught. In each instance the spermatozoa were dead on the forty-five hour examination done at that time.

The spermatozoa of the donor used in the test referred to herein have the greatest viability in the cervical canal of any donor so far recorded. As brought out in the table, at the 110 hour examination, on the fifth day, the spermatozoa were alive in case 4 and were still attempting to penetrate some pus cells that were introduced on the slide. Their movements were sluggish but there was life.

53 East Ninety-Sixth Street.

8. Cori, G. T.; Cori, C. F.; and Buchwald, K. W.: Mechanism of Epinephrine Action: Changes in Liver Glycogen and Blood Lactic Acid After Injection of Epinephrine and Insulin, J. Biol. Chem. **86**: 375-388 (March) 1930.

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE.—*In their elaboration, these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr. Bernard Fantus. The views expressed by various members are incorporated in the final draft for publication. The articles will be continued from time to time in these columns. When completed, the series will be published in book form.*—ED.

THE THERAPY OF NONTUBERCULOUS LUNG ABSCESS

IN COLLABORATION WITH DR. RALPH BOERNE BETTMAN
Associate Professor of Clinical Surgery, Rush Medical College, University of Chicago

The symptoms, clinical course and physical manifestations of lung abscess point to two diverse methods of origin. The first occurs as a result of the blocking of a bronchus by an infected clump of material, the second as a result of an infection in the interstitial pulmonary structure. The first might be called a bronchial abscess, the second an interstitial abscess. A large number of lung abscesses arise as a combination of the two conditions; but usually one form or the other, that is, the bronchial or the interstitial, predominates.

A classic form of bronchial abscess is the one arising shortly after some operation on the upper air passages. This abscess is usually situated in the right lower lobe, is accompanied sooner or later by copious expectoration, and roentgen examination discloses a more or less circular opacity with a well defined fluid level in it.

The classic form of an interstitial abscess is the one secondary to some generalized infection elsewhere in the body or in the lung itself. It may be situated in any part of the lung fields. The early roentgenogram shows a hazy irregular opacity without a fluid line. (It is taken for granted that all chest plates are taken with the patient either in the upright position or lying on his side.) The patient usually has a high fever. There may be no sputum or, if sputum is present, instead of being foul smelling and purulent it is odorless and mucoid. Sooner or later such an interstitial abscess usually breaks into a bronchus. After bronchial drainage has been established there is usually an improvement in the general condition of the patient, the temperature falls, and the sputum becomes copious and foul.

For the sake of therapy it is best to subdivide lung abscesses into the acute and chronic forms. An acute lung abscess is one of recent origin and, excepting for an occasionally well situated bronchial abscess that can

be reached by the bronchoscope, it cannot be treated specifically. A chronic abscess, on the other hand, is one in which the pathologic changes have been fairly well established and, in this form, surgical treatment can often be successfully applied.

DIFFERENTIAL DIAGNOSIS

These forms of lung abscess must be differentiated for purposes of treatment from:

(*a*) *Tuberculous cavity.* If a tuberculous cavity is present, tubercle bacilli will always be found sooner or later on repeated examinations of the sputum. Continued absence of these organisms points in favor of a nontuberculous cavity. In addition, physical and x-ray signs of tuberculosis are much more apt to be found in the apex and on both sides of the lung. Pulmonary abscess is more usually limited to one lobe, most commonly the right lower lobe.

(*b*) *Bronchiectatic cavity.* Contrast medium x-ray examination will differentiate a bronchiectatic cavity from an abscess, for in the former condition the cavity becomes well outlined by the adventitious shadow while the contrast medium seems to avoid a lung abscess, so that the dense contrast medium shadow will usually be outside the lung abscess shadow. It may even be surrounding it.

(*c*) *Carcinoma cavitation.* When a patient of "cancer age" develops signs and symptoms of lung abscess without the history yielding the usual etiologic factors for the development of lung abscess, carcinoma must be thought of. The same principle applies to empyema, which is also not infrequently a sequel of thoracic carcinoma. The differentiation is made by roentgenography and bronchoscopy.

(*d*) *Abscess due to aspiration of foreign body.* This is also suggested by the history and the diagnosis made by roentgenography and bronchoscopy.

PROPHYLAXIS

Prior to operations on the mouth and pharynx, the best possible oral hygiene should be employed. Disease of the teeth and the gums should be taken care of in a routine manner; and an antiseptic mouth wash, such as the Antiseptic Solution of the N. F. VI, should be used as a routine.

During tonsillectomy the following precautionary measures will help to prevent lung abscess: anesthesia below the point of abolishing the cough reflex, keeping the head lower than the body, keeping the pharynx clear of mucus and blood by means of a suction tube, and prompt ligation of all bleeding vessels.

Following operations of any kind, aspiration of vomitus must be prevented by constant attendance of a nurse until the patient can clear his throat voluntarily; coughing should be encouraged (not checked by opiates) and, if respiration is feeble, hyperventilation of the lungs by carbon dioxide-oxygen inhalation is indicated to prevent atelectasis.

Bronchoscopic aspiration.—When, during or shortly after an operation in the nose, throat or mouth the patient shows signs of pulmonary involvement, a cough, cyanosis, possibly early fever, and later the roentgenogram shows atelectasis of a part of the lung, a bronchial embolus should be suspected. Then an immediate bronchoscopy is indicated. If the bronchoscopy reveals a plug in one of the main divisions of the bronchus, this plug can be removed by suction and the symptoms usually subside almost immediately. Unfortunately, as a rule the bronchial plug lodges in one of the smaller inaccessible bronchioles out of reach of the bronchoscope.

TREATMENT

Lung abscess is one of the few kinds of abscess in which "nature" should be given every possible chance for evacuating the pus before surgery is resorted to. To draw correct indications for details of treatment, one must differentiate between the following three kinds of pulmonary abscess: (*a*) acute lung abscess, (*b*) chronic lung abscess and (*c*) multiple lung abscesses.

Acute Lung Abscess.—This is to be treated along symptomatic lines, for the great majority of acute lung abscesses heal without the necessity of surgical procedure; and surgery in the presence of an acute lung abscess has a prohibitively high mortality rate. The following indications are present:

1. Rest: Absolute rest must be employed not only during the febrile stage but also as long as there is x-ray evidence of the presence of an abscess. The patient's position should, however, be changed from side to side. This rest treatment should be accompanied by the diet and hygiene usually employed in fever (q. v.).

Paralytic (intestinal) ileus (q. v.) is apt to be a concomitant of almost any type of chest infection; hence the abdomen must be carefully observed.

If the patient is cyanotic he should be placed in an oxygen tent or receive oxygen through a nasal tube introduced into the pharynx. As, however, the shallow breathing resulting from the increased oxygen tension might interfere with a beneficial cough, it may be wise to remove the tent for short intervals.

If the patient is restless, morphine should be given in guarded doses; but the cough reflex should never be greatly impeded with sedatives.

2. Resistance: One should aim to increase resistance. Transfusion of whole blood is undoubtedly the best "tonic" at the physician's disposal for the septic patient.

Neoarsphenamine should be given whenever spirochetes and fusiform bacilli are found in the sputum. It should be administered at the earliest possible moment and in rather small "tonic" doses (0.15 Gm. intravenously) every other day, the effects being carefully observed. Heroic doses may harm the patient. In the late stages, little benefit is to be expected from this treatment. It is not a specific agent in this condition.

Hematinic or cardiotonic therapy may be demanded by the condition of the blood or the circulation.

Vaccine and serum therapy has, in general, been absolutely disappointing.

3. Bronchial drainage: One should favor bronchial drainage. This means that checking the cough by means of morphine, codeine or any other antitussic is tabu, excepting possibly temporarily in the early stages when pain and insomnia threaten to exhaust the patient.

Postural drainage, i. e., assuming that position which results in maximum expectoration, should be resorted to whenever the opening into the bronchus is large enough to secure good evacuation; and it should be continued for as long a period (from five to twenty minutes) and undertaken as often (five or six times a day) as the patient's strength and inclination permit.

Considerable experimentation may be required to determine the best position, but efforts to discover it are decidedly worth while. In abscesses of the upper lobe it may be the semireclining posture. In abscesses

of the lower lobe it may be secured by a complete head-down position, with the patient's hips and legs across the bed. Occasionally lying on the back over an inverted chair is effective. Postural drainage not only facilitates healing but may do away with the harassing cough during the day as well as the night.

In abscess of the lower right lobe, for example, the best postural drainage is usually obtained by lowering the patient's head until he is almost upside down. To get the patient in this position, one should have him lie across the bed and place a pus basin on the floor at the side of the bed and then have him swing over the bed until his elbows are resting on the floor on each side of the pus basin, with only his hips and legs remaining on the bed. In this position he will often expectorate huge quantities and thus drain himself thoroughly. Naturally, very sick or elderly patients with cardiac or arteriosclerotic changes may not be able to tolerate this position, and a compromise between the best possible position for drainage and that tolerated by the patient must be sought.

There are patients who find it easier to get up material from the bronchi when they are sitting up in bed than when they are lying down. This is because pulmonary ventilation is facilitated by the upright position. In such patients it would be this position that should be resorted to for postural drainage.

PRESCRIPTION 1.—*Aromatic Inhalation Fluid*

℞	Oil of eucalyptus	8.00 cc.
	Oil of pine needles	8.00 cc.
	Oil of betula	8.00 cc.
	Tr. of benzoin to make	100.00 cc.

M. Label: Add from 1 to 2 cc. to hot water in a tea kettle, to the spout of which a rubber tube has been attached, the patient taking the free end of the tube in his mouth to inhale the steam.

PRESCRIPTION 2.—*Creosote Carbonate Emulsion*

℞	Creosote carbonate	7.50 cc.
	Tragacanth, in fine powder	0.75 Gm.
	Syrup	25.00 cc.
	Alcohol	6.25 cc.
	Compound spirit of orange	6.25 cc.
	Distilled water, a sufficient quantity to make	100.00 cc.

Mix ingredients in the order named and make an emulsion.

Label: From one to two teaspoonfuls in milk three times a day after meals.

Each teaspoonful (5 cc.) contains 0.375 cc. of cresote carbonate.

Definitely contraindicated is drainage in the inverted posture in very sick patients, especially if they are cyanotic or have high fever, rapid pulse and a low vital capacity. In such patients the inverted posture may actually result in death.

It should be understood, of course, that postural drainage is of no value until the abscess has broken into a bronchus and that, indeed, it is of much greater importance in bronchiectasis than in lung abscess.

Bronchoscopy is chiefly of diagnostic value, but it may also permit removal of granulation tissue or otherwise increase the size of the opening so that the abscess drains more freely through the bronchial tubes. When this can possibly be accomplished, it is much to be preferred to surgical drainage through the chest wall. Hence, bronchoscopy should always be employed before surgical opening of the abscess is done; but used otherwise, as an attempt to cure the disease, it is unsurgical. It cannot be carried out often enough to keep the abscess drained, and it may cause a spread of the inflammation. To be of value in the treatment of any abscess, drainage must be continuous or as nearly continuous as possible and a weekly or semiweekly emptying of any pus cavity is of little value.

4. Fetor of sputum: One should antagonize fetor of sputum by means of: (*a*) Vapor inhalation. The Compound Creosote Inhalant (Recipe Book), consisting of equal parts of chloroform, alcohol and creosote may be inhaled from a chloroform mask and in as great a concentration and as continuously as the patient will tolerate. If this proves irritative, (*b*) steam inhalation, possibly flavored with an aromatic inhalation fluid (prescription 1) may be resorted to, provided it does not cause a feeling of "stuffiness" in the chest. (*c*) Taking creosote carbonate in ascending drop dosage, from 5 to 15 or more drops shaken up with hot milk, three times daily after meals, or preferably in the form of an emulsion of Creosote Carbonate (prescription 2 from the new edition of Recipe Book), may possibly be of service in lessening fetor; but it must not be employed to the extent of interfering with appetite and digestion or of damaging the kidney. (*d*) A mouth wash that is strongly flavored, e. g., the "N. F. Dentifrice" (to be prescribed by this title), used immediately each time after the patient has expectorated his foul-smelling sputum, is usually very desirable. One puts into warm water a few drops of this dentifrice, enough to produce a slight turbidity, and thus secures maximum efficiency in the form of an aromatic mouth wash at minimum expense.

5. Roentgen irradiations: These may prove a useful adjunct by clearing up surrounding pneumonic consolidation and favoring liquefaction and early rupture of the abscess into the bronchus.

6. Collapsotherapy: This must be employed with discrimination. It may give rest to the inflamed part. It reduces the size of the cavity that requires obliteration, provided there is no dense abscess wall and there are no adhesions. The collapse may be induced by partial pneumothorax or, if the abscess is in the lower lobe, by phrenicectomy. The selection of cases for this type of therapy requires great care and should be made by one of large experience. The danger of empyema is increased by the use of artificial pneumothorax.

Chronic Lung Abscess.—1. Surgical drainage: The presence of a more or less dense abscess wall that prevents the success of collapsotherapy indicates surgical drainage. Without it such patients are liable to develop anemia and cachexia, amyloidosis and clubbed fingers, osteo-arthropathy and metastatic (e. g., cerebral) abscesses. Impairment of proper aeration of blood—cyanosis—is the rule, and there is constant danger of fatal hemorrhage or of a perforation of the abscess with production of pyopneumothorax or mediastinitis. One must therefore not wait too long. When the patient's general condition is obviously deteriorating in spite of all efforts to improve it, one of the following operative procedures is indicated: (*a*) the one-stage operation, (*b*) the two-stage operation, (*c*) bronchoscopic drainage. Accurate localization by means of preliminary x-ray studies is essential before one can decide on the mode of approach. The one great difference between an abscess of the lung and an abscess elsewhere is that the approach to the lung abscess lies through an easily infected potential space, the pleural cavity. If the pleural cavity is obliterated and the lung fixed at the site of the abscess to the chest wall, as it often is, the drainage of such an abscess becomes as simple as the draining of any other subcutaneous collection of pus. If an attempt, however, is made to drain a lung abscess through a nonobliterated or free pleural

space, not only will the lung retract from the chest wall but the now huge pleural cavity will become infected, resulting in a massive empyema.

It is axiomatic that no lung abscess may ever be drained externally until after the pleural space at the site of drainage has been obliterated.

(*a*) Immediate drainage. It frequently happens in lung abscess situated in the periphery of the lung that the pleural layers will become adherent one to the other as a direct result of the underlying infection. Thus, when it becomes time to drain the abscess, the pleural cavity being already obliterated, the drainage can be carried out through simple incision as if the abscess were in the chest wall.

After exposure by resection of a portion of a rib, the abscess is then opened by means of slow coagulation with the diathermy knife or cautery. One must, of course, beware of using an explosive general anesthetic, such as ether or ethylene, during such an operation. On the other hand, the plunging of a forceps or of the finger into the cavity is dangerous. It may then be necessary to pack the cavity for the first twenty-four or forty-eight hours because of the occasional free hemorrhage. If electrocoagulation can be used, this may be prevented. The drainage channel is best maintained by a large red rubber tube. Red rubber tubes are x-ray opaque, which is often a decided advantage. Drainage must be continued until the abscess cavity has become obliterated.

(*b*) Two-stage operation. If adhesions have not been naturally formed, because the inflammatory process is in the depths of the lung far from the visceral pleura or because of the presence of an exudate, or for any other reason, it becomes absolutely essential as the first step in external drainage to obliterate the pleural space at the site of proposed drainage by artificially producing adhesions.

As soon as a "window" has been made into the chest by means of rib resection and before the pleura is incised, one should carefully look for respiratory movements of the lung. If these are present, a nick is made into the pleura; and, at once, gauze is packed into the opening and against the lung. After a week or ten days the packing is removed and the abscess entered as in the immediate drainage operation.

(*c*) Bronchoscopic drainage. Abscesses near bronchi may occasionally be reached through the bronchoscope.

From what has been said it is obvious that a chest must never be "needled" to make a diagnosis of lung abscess, as such a procedure will probably result in a complicating empyema.

2. Supportive measures: Adequate diet, plenty of bed rest, securing peace of mind, and—if possible—a dry, equable climate are important adjuvants to favor the healing of the abscess even after surgical drainage.

Multiple Lung Abscesses. — In multiple embolic abscesses in different parts of the lung, surgical therapy is impossible. It is only when multiple abscesses are confined to one lobe and they have become chronic that cautery lobectomy is indicated. After a large part of the chest wall overlying the lobe has been taken away and firm pleural adhesions have been established, one advances the cautery, eating out in successive operations more and more of the lung until all the abscesses have either been opened or eradicated. Thoracoplasty may finally expedite the healing. Occasionally, instead of cautery lobectomy, a one-stage lobectomy may be indicated.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. HOWARD A. CARTER, Secretary.

KAISERAIRE FILTER VENTILATOR NOT ACCEPTABLE

Manufacturer: H. S. Kaiser Company, Chicago.

This ventilator is marketed under the claims that it removes the "pollen that causes hay fever" and retards and prevents various diseases by "preventing germs from entering the rooms and offices in which people live and work."

The filter mat, which is removable, consists of several layers of small paper tubes of decreasing diameter arrangement in staggered "herring-bone" fashion, i. e., the first layer of parallel tubes is offset to the right; the next layer, which is smaller in diameter, is offset to the left; the next to the right, and so on through the entire mat. This arrangement is suggested so that the air laden with dust and pollen, in order to pass through the entire filter, would have to travel in a zigzag manner. Small particles of matter, having inertia and believed to move in straight lines, would presumably adhere to the wall at the point of impingement. The filter mat is very heavily coated with a thick, very pungent oil, to which the dust and pollen particles are expected to adhere. Air is forced through the filter by means of two fans of the ordinary blade type.

In a laboratory acceptable to the Council, this unit was examined. It was installed in an ordinary bedroom window with the usual precautions taken as to sealing of cracks between unit and window and window-casing. Slides coated with a thin layer of petrolatum were exposed in various parts of the room, which was closed for three twenty-four hour periods before the testing of the unit was begun for its pollen removing efficiency. During the last period the unit was operated continuously for twenty-four hours and at that time several slides were exposed at the outlet ducts of the unit. In the course of these three periods, no pollen grain was found on the slides exposed. However, there were numerous dust particles found on the slides which were exposed both in the room and at the outlet ducts of the unit.

At the intake of the filter, while it was in operation, 0.25 Gm. of pollen of the giant ragweed (Ambrosia trifida) was suspended in the air. The pollen was released within a distance of five feet of the intake. Slides were exchanged in front of the outlet ducts at five minute intervals for a period of one hour, at the end of which time the slide was left for twenty-four hours. Then, at the end of the twenty-four hour period, a fresh supply of slides was placed before the outlet ducts again and allowed to remain for another twenty-four hours. The slides removed within five minutes showed the greatest number of pollen granules, twenty-one per unit area of 1.8 sq. cm. counted. As the time increased, i. e., toward the end of the hour, slides exposed for five minutes showed an average of only three pollen grains per unit area counted. The slide for the first twenty-four hour period, which was placed before the outlet duct at the end of the one hour run, showed only seven pollen grains per unit area. The second twenty-four hour slide showed three pollen grains per unit area counted; but, as the outside air by this time probably was almost free from the suspended pollen, doubtless these grains were blown off of the points where they had adhered initially.

Slides exposed in rooms in which dust was settling showed a total of eleven pollen grains per unit area counted for the first twenty-four hours, which represents eleven grains per cubic yard of air, and two grains per cubic yard of air for the second twenty-four hour period.

The pollen counts obtained are high when compared to the counts obtained on other types of filters, such as those of felt or cellulose. The pollen counts indicate a percentage of efficiency for this filter which may afford the very mildly sensitive hay fever subject some freedom from symptoms, but they indicate inadequateness of the filter for the severe type of case in which symptoms are manifested with pollen counts as low as two and three granules per cubic yard of air. The filter would be ineffective, also, in localities where very highly

antigenic pollens are found. As the filter admits dust particles up to 20 microns in diameter, it will admit pollen that is usually much smaller.

One objection to the unit is the highly pungent odor that is given off by the oil. This is most irritating and, in the opinion of the Council, would be a decided drawback to most persons with asthma and to many hay fever sufferers. Pungent, penetrating odors frequently aggravate such sensitive individuals; and a massive dose, such as one is subjected to with this unit, may be harmful to many patients.

In the opinion of the Council, the Kaiseraire Filter Ventilator does not possess adequate efficiency for removing pollen from the air; the volume of air it displaces is insufficient for comfort, and the presence of a pungent, penetrating odor is considered objectionable and possibly harmful to sensitive individuals. Therefore the Council on Physical Therapy voted not to include the Kaiseraire Filter Ventilator in its list of accepted devices.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING STATEMENT.

PAUL NICHOLAS LEECH, Secretary.

THE STATUS OF CERTAIN QUESTIONS CONCERNING VITAMINS

As a result of the increasing importance of questions concerned with vitamin containing foods and medicinal preparations, the Council on Pharmacy and Chemistry and the Committee on Foods of the American Medical Association appointed a joint cooperative committee for study of this field with instructions to report to the two parent groups. The Cooperative Committee consisted of Prof. W. E. Anderson, Dr. E. M. Bailey, Dr. K. D. Blackfan, Dr. S. W. Clausen, Dr. Morris Fishbein, Mr. Raymond Hertwig (resigned Dec. 31, 1935), Dr. P. C. Jeans, Dr. P. N. Leech, Dr. E. M. Nelson, Dr. W. W. Palmer, Dr. G. F. Powers, Dr. L. J. Roberts, Dr. M. S. Rose and Dr. Torald Sollmann.

At a meeting in Chicago October 18-19, the Cooperative Committee arrived at conclusions which have been considered by the Council and the Committee on Foods. The following is a summary of the Council's decisions based on the Cooperative Committee's recommendations, which has been authorized by the Council for publication for the information of physicians, manufacturers and the public. Certain other recommendations of the Cooperative Committee will be published by the Committee on Foods.

Lay Advertising of High Potency Vitamin Preparations.—In the deliberations of both the Cooperative Committee and the Council, it was brought out that considerations of the varying potency of oils, concentrates and crystallized preparations, together with those of proved clinical effectiveness and recommended dosage, combine to make impossible a categorical ruling on this subject. The Council decided that it would consider vitamin products, for advertising both to the public and to the profession, on the basis of the general principle that advertising to the public of vitamin preparations for prevention of disease [but not for the treatment of disease] shall be permitted provided the dosages are within the established concentrations which are considered safe; also that the Council shall not accept for sale to the public concentrates or pure forms of vitamins when the facts as to dosage are not available or when the daily dosage recommended is beyond that considered safe; furthermore, that usefulness and necessity as a prophylactic must be established.

The Council in its annual meeting, later, adopted the following specific rulings based on the foregoing decisions:

1. Cod liver oil and preparations made by the addition of therapeutically indifferent substances to the untreated oil, such as emulsions and malt preparations, may be advertised to the public if the prescribed daily dose provides at least 6,250 units of vitamin A and 625 units of vitamin D. Those are the numbers of units provided by two teaspoonfuls of cod liver oil complying with the N. N. R. standard.

2. Preparations of vitamins A and D other than those included under 1 may be advertised to the public if the prescribed daily dose provides not more than 10,000 units of vitamin A and not more than 1,000 units of vitamin D.

3. Preparations of vitamin A which do not contain a therapeutically significant quantity of vitamin D and for which no recommendations for vitamin D are made may be advertised to the public if the prescribed daily dose provides not more than 10,000 units of vitamin A.

4. Preparations of vitamin D which do not contain therapeutically significant quantities of vitamin A and make no representations for vitamin A may be advertised to the public if the prescribed daily dose provides not more than 1,000 units of vitamin D.

Dosage of Cod Liver Oil.—The vitamin A potency (as well as the vitamin D potency) of the official cod liver oil is now higher than that of the cod liver oil on which was based the dosage heretofore recommended in N. N. R. (namely, for infants 3 teaspoonfuls and for adults 6 teaspoonfuls daily). In addition, the lower limit of vitamin A potency per gram of the cod liver oils accepted for N. N. R. is higher than that of the official oil. In view of this the Cooperative Committee considered whether or not a corresponding reduction should be made in the recommended dosage on the basis of vitamin content. It was pointed out that the recommended dosage for infants is largely empirical, though it corresponds to the widest general practice. It was further pointed out that the adult need of vitamin D (except in certain instances) is problematic and that there is a lack of data on the basis of which to determine an adult dosage of vitamin A. The Cooperative Committee referred the question back to the Council for categorical decision. The Council, after considering the report of the Cooperative Committee's deliberations, set the dosage of cod liver oil for infants at two teaspoonfuls daily. This is in effect the dosage statement which will appear in N. N. R. 1936.

Presence of Antioxidants as Preservatives, Particularly in Halibut Liver Oil and Other Fish Liver Oil Preparations.—At its February 1935 meeting the Council took the following action in reference to antioxidants: that manufacturers of accepted products be informed that under conditions of ordinary usage there does not appear to be necessity for use of hydroquinone for the proper preservation of cod and halibut liver oils and that, until more convincing evidence in favor of the practice is submitted, it may not be permitted (Abstracts of Minutes of Annual Council Meeting, THE JOURNAL, June 1, 1935).

Representatives of three firms have requested the Council not to place into effect this ruling. It was the contention of the representatives of these firms (1) that hydroquinone aided in preserving vitamin A activity during the interval between the refining of the oil and the filling of it into bottles or capsules; (2) that after the consumer obtained the fish liver oil he may have used it (particularly when in bottles) in such a manner that the air would increase rancidity and reduce vitamin A potency of the oil. The three firms presented briefs the purpose of which was to show that the use of hydroquinone per se was harmless. Among the arguments in favor of the use of hydroquinone was the statement that its use as an antioxidant over a period of years without reports of fatalities constituted a confirmatory mass experiment.

The Cooperative Committee on Vitamins considered this evidence and came to the conclusion that the firms had failed to demonstrate that, under ordinary conditions of use, the oxidation which halibut liver oil undergoes is serious; that the matter seemed to involve largely a controversy between certain patent-owning interests.

The Committee pointed out that it is as important to know whether or not the product formed by oxidation of hydroquinone, possibly quinhydrone, is injurious, as it is to know whether hydroquinone itself is injurious. The Committee felt that the mass experiment involved in the use of this antioxidant over a period of years without report of its causing agranulocytosis or similar conditions was of some weight as evidence

in favor of its harmlessness. The Cooperative Committee emphasized, however, that this was not sufficient evidence of the harmlessness of the use of hydroquinone.

It was the consensus of the Committee that the previous action of the Council should stand but that it be not enforced for another six months in order to permit firms opportunity to gather evidence of a worthwhile nature and that in the meantime no claims for stabilization shall be made.

The Council approved the conclusion of the Cooperative Committee and voted to extend the time for the submission of evidence by the firms for a period of six months.

Use of Carbon Dioxide as a Preservative and as a Means of Increasing Palatability.—The Cooperative Committee considered this question as the result of claims made by a certain firm for its cod liver oil, which is impregnated with carbon dioxide. It was felt that there has not been adduced evidence to warrant permitting a statement that carbon dioxide under ordinary conditions of usage remains dissolved in fish liver oil for a sufficient length of time to impart any change in palatability.

The Cooperative Committee recommended that firms be asked whether or not they have been able to obtain any better evidence to warrant the claim that carbon dioxide when used in fish liver oils increases palatability and prolongs stability, and that in the meantime such claims be not recognized until these firms can produce the satisfactory evidence requested.

The Council adopted the recommendation of the Cooperative Committee.

Prophylactic and Therapeutic Claims Permissible for Vitamins A, B (B_1 and G), C and D.—The Cooperative Committee adopted for further consideration a statement of permissible claims for each of these vitamins which had been formulated by the Council's referee for vitamin preparations. These statements were considered by individual members of the Cooperative Committee and referred back to the Council's referee, who submitted a revision of the statements to the Council. The Council considered them further and adopted the following statements, which are to appear in N. N. R. 1936:

Vitamin A

The term "vitamin A" has been applied to any one of several substances or to a mixture of them producing a certain demonstrable specific physiologic effect. It seems to have been definitely established that there are at least five substances which can produce to some degree this characteristic response in the animal body. These are vitamin A itself, alpha, beta and gamma carotene and cryptoxanthin. The last four of these, the precursors of vitamin A, are produced in the plant kingdom, and ingestion of these substances by most animals results in varying degree (depending on the species of animal and the precursor fed) in the formation of a compound having the empirical formula $C_{20}H_{29}OH$ and to which no other name than vitamin A has been ascribed. The extent to which the different precursors of vitamin A can be converted to vitamin A by different species of animals has not definitely been established. The exact function of vitamin A has not been established, but the pathologic picture which results from varying degrees of deficiency has been the subject of extensive investigation.

The claims recognized under vitamin A shall be recognized under the precursors of vitamin A only under conditions specified for Carotene (New and Nonofficial Remedies 1936).

Allowable Claims.—1. Evidence for the significance of vitamin A in human nutrition is based on the fact that a characteristic eye disease, usually called xerophthalmia, results from a deficiency of this vitamin.

2. It is generally agreed that the first symptom or at least one of the first clinical symptoms of vitamin A deficiency is night-blindness, or nyctalopia. For this type of night blindness vitamin A is a specific. Cases of nyctalopia exist which do not respond to treatment with vitamin A. These may be due to congenital defects or to other conditions than avitaminosis "A."

3. Present indications are that vitamin A is an aid toward the establishing of resistance of the body to infections in general only when there has been an exhaustion of body reserves of the vitamin and the ingestion of vitamin A is inadequate. It certainly has not been shown to be specific in the prevention of colds, influenza and such infections, nor has it been demonstrated that ingestion of vitamin A far in excess of that necessary for normal body function and readily obtained from a properly selected diet is an aid in preventing various types of infections.

4. A deficiency of vitamin A results in a retardation of growth when body stores of the vitamin have been depleted, but it must be borne in mind that vitamin A is no more important in contributing to normal growth than any one of the other vitamins, the essential elements, or amino acids. Statements conveying the impression that vitamin A is more important in promoting growth than other food essentials are therefore considered misleading and objectionable.

5. There is at the present time inadequate evidence to warrant the claim that the ingestion of sufficient vitamin A will prevent the formation of renal calculi in man.

Vitamin B (Complex)

The term "vitamin B" should not be used loosely.

Ample evidence indicates that two or more physiologically active substances play a rôle in relation to numerous phenomena formerly explained in terms of vitamin B alone. At least two substances have received general recognition in this connection; the existence of others has been reported but the evidence submitted has not been accepted as convincing by all investigators in this field. The differences between the various products referred to is now substantiated by chemical evidences. Thus the crystallized antineuritic vitamin of Jansen and Donath, and of at least four other investigators, is a nitrogenous compound of defined composition; the so-called vitamin G appears to belong to the flavine group of compounds that have been extensively studied by Kuhn and others. There is no satisfactory evidence that the flavines have any definite relationship to the development or cure of pellagra.

It seems desirable, therefore, to insist that claims shall refer clearly to one or more of the following:

(a) Vitamin B_1, and/or
(b) Vitamin G (B_2), and/or
(c) The undifferentiated mixture of these present in many foods, which might be referred to as "vitamin B complex" or "undifferentiated vitamin B."
(d) Reference to "Pellagra-preventing value" shall be limited to products which have actually been tested for such value and shall not be based on so-called vitamin G assays with rats.

It shall be understood that the terms in (c) above refer not only to vitamins B (B_1) and G (B_2) but also to other alleged members of the vitamin B complex. If some other alleged member of the complex is being referred to, the statement might be allowed provided the investigator, who has alleged the existence of the new factor, is cited.

Allowable Claims.—1. *Vitamin B_1 may be cited as of value in correcting and preventing anorexia of dietary origin in certain cases.*

There are many causes of anorexia, some referable to infections and the reactions thereto, others to organic disorders, and still others related to faulty diet. Where there is no rather obvious cause of anorexia in question, other than a possible dietary one, it is permissible to claim that vitamin B_1 may be of therapeutic value when the condition to be treated is due to a deficiency of that vitamin.

2. *Vitamin B_1 is of value in securing optimal growth of infants and children.*

Citations in the literature support the claim that a suboptimal supply of vitamin B_1 results in limitation of growth.

3. *Vitamin B_1 is of value in correcting and preventing beriberi.*

The consensus of the students of beriberi is that this disease is due primarily to an insufficient supply of vitamin B_1. There are conditions which probably could be designated as "latent beriberi"; it does not seem wise at this time to attempt the formulation of a definite statement covering such conditions other than that presented in item 5.

4. *Because vitamin B_1 is a dietary essential its administration in concentrated form is of value in some conditions where difficulty in utilizing ordinary foods in the usual way is encountered.*

The present status of research on the clinical use of vitamin B_1 for specific diseases other than beriberi and for infant feeding, is such that *definite* claims for therapeutic value in relation to such diseases cannot be recognized. Its use may be indicated, however, in such restricted conditions as pernicious vomiting of pregnancy, tube feedings through a jejunal fistula, and the like, because the above permitted statement applies to such conditions and gives an intelligent basis for such therapy.

5. Claims for concentrates of vitamin B_1, offered for clinical use should state the potency in terms of the International unit. The term "concentrate" or a synonym will not be recognized if the product does not exceed a

potency of 25 International units per gram (or per cubic centimeter), or if it is a natural product which may have been subjected to a process of dehydration.

6. In connection with medicinal foods acceptable for N. N. R., the claim that a food is valuable because of its vitamin B_1 content may be made only if it provides in the quantity of food consumed daily at least 200 units of vitamin B_1.

Any food preparation having less than such an amount cannot be regarded as a noteworthy medicinal source of the vitamin. In the light of present knowledge the daily requirement for vitamin B_1 appears to be not less than 50 units (International) for the infant and 200 units (International) for the adult.

7. There are many experimental indications in the literature indicating other possible functions of vitamin B_1, e. g., an influence on intestinal motility and neuritis of various types, and also indications of greatly augmented requirements when metabolism is increased as in hyperthyroidism, neuritis of various types, and infections. It seems too early to permit advertising claims for these items.

Vitamin C

Cevitamic Acid

There is ample experimental and clinical evidence to show that vitamin C in optimum amounts is an essential dietary constituent. Suboptimal amounts result in the development of clinical and pathologic phenomena to which the descriptive term scurvy has been applied.

The chemical nature of the formerly unidentified essential food substance has been discovered. Its empirical formula is $C_6H_8O_6$. Vitamin C has been prepared in commercial quantities both from natural sources and through synthesis. The Council on Pharmacy and Chemistry of the American Medical Association has adopted the nonproprietary designation cevitamic acid for the crystalline vitamin C introduced as Ascorbic Acid.

Allowable Claims.—1. Definite claims for the therapeutic value of vitamin C should be permitted only in relation to scurvy until further clinical or experimental evidence has substantiated its usefulness in other states.

2. Vitamin C is acceptable for the correction and prevention of scurvy. This effect has been established experimentally and by clinical investigation.

3. It may be permissible under certain conditions to refer to the therapeutic value of vitamin C in early and latent scurvy. Convincing clinical evidence has established that this state does occur. It would be well to emphasize the fact that the diagnosis rests, however, on the basis of roentgenologic evidences in the long bones, and possibly failure to excrete an optimum amount of cevitamic acid in the urine.

4. Dental caries, pyorrhea, certain gum infections, anorexia, anemia, undernutrition and infection alone are not in themselves sufficient indications of vitamin C deficiency but according to experimental and clinical investigation they may be concomitant signs of vitamin C deficiency. Therefore, it would be permissible to accept the claim for the therapeutic value of vitamin C in these symptomatic conditions *only when* it is definitely stated that they are the consequences of a deficiency or suboptimal amount of vitamin C or when there is a pathologic interference with assimilation of the amount necessary for the preservation of health.

5. Unless more convincing evidence is present than is now available, no claim referable to the anti-infective effect of vitamin C will be recognized. Secondary infections are characteristic of disturbances of nutrition, particularly in all vitamin deficiency diseases. It has not been established that vitamin C has a therapeutic effect which directly influences associated secondary infections in scurvy.

6. Because vitamin C is a dietary essential its administration in concentrated form is of value in conditions where difficulty in introducing orally or utilizing ordinary foods in the usual way is encountered. Vitamin C (cevitamic acid) is accepted as an essential dietary constituent in infant feeding but it should not be accepted for use in the treatment of diseases except according to the conditions mentioned above. It is generally administered in the form of a vitamin C carrying juice. When there is persistent vomiting, diarrhea, or any other condition preventing its utilization in proper amounts it would be permissible to give vitamin C parenterally in concentrated form as sodium cevitamate.

7. Concentrates of vitamin C offered for clinical use must state the potency in terms of the International unit. The International unit for vitamin C, which was formerly defined as the vitamin C activity of 1 cc. of lemon juice, has now been defined as the vitamin C activity of 0.05 mg. of l-cevitamic acid (ascorbic acid). This is the quantity of l-cevitamic acid usually found in 0.1 cc. of lemon juice.

8. The claim that a food is valuable because of its vitamin C content should be permitted only if it provides a daily intake of at least 250 units of vitamin C.

9. A reasonable general statement regarding allowable claims for vitamin C would be as follows:

An optimum amount of vitamin C should be supplied at all ages for its therapeutic value in preventing the development of acute or latent scurvy.

Claims for therapeutic value of vitamin C may be accepted when the agent is described as a corrective measure for scurvy due to a demonstrable absence or a suboptimal quantity in the diet, or in cases in which it is definitely known that there is interference with the absorption of an optimal amount.

Advertising of vitamin C for such symptoms as failure to gain in weight or stoppage of growth, anorexia, anemia, infections, symptoms referable to the central nervous system or hemorrhagic conditions cannot be accepted unless it is definitely stated that the symptoms are referable to a demonstrable deficiency of vitamin C.

The cevitamic acid equivalent or potency in terms of International units should be stated in all dosage claims for vitamin C. Cevitamic acid (vitamin C) is easily decomposed in presence of certain other substances; therefore, care should be exercised against administering it (or orange juice) in mixtures, or by such procedure as to render it ineffective.

Vitamin D

The term "vitamin D" is applied to one or more substances which function in the proper utilization of calcium and phosphorus. Vitamin D has been produced in crystalline form as one of the products of ultraviolet irradiation of ergosterol and shown to be a sterol having the empirical formula $C_{28}H_{43}OH$. Naturally occurring vitamin D has not been isolated, but there is evidence suggesting that it may not be identical with the artificially produced substance, and that more than one natural compound may function as the vitamin.

Allowable Claims.—1. Vitamin D is recognized as a specific in the treatment of infantile rickets, spasmophilia and osteomalacia, diseases which are manifestations of abnormal calcium and phosphorus metabolism. Vitamin D is valuable in the preventive as well as curative treatment of these diseases. Complications such as certain renal diseases or glandular malfunction may preclude normal response to vitamin D therapy. During acute infections, especially of the gastro-intestinal tract, vitamin D may prove ineffective because poorly absorbed.

2. Direct exposure of the skin to ultraviolet light from the sun or from artificial sources results in the formation of vitamin D within the organism but the Council cannot recognize statements or implications that vitamin D has all beneficial effects of exposure to sunshine.

3. There is clinical evidence to justify the statement that vitamin D plays an important rôle in tooth formation and maintenance of normal tooth structure, but there is no warrant for the claim that adequate vitamin D intake will insure normal tooth structure or that adequate vitamin D intake will prevent dental caries.

4. Animal experimentation has shown that correction of an inadequate intake of vitamin D results in the more economical utilization of calcium and phosphorus and also that the undesirable effects of improper ratios of calcium and phosphorus in the diet can largely be overcome by normal intake of vitamin D. The importance of these observations in their application to man is not entirely apparent because of the lack of adequate clinical evidence showing the availability of different forms of calcium and phosphorus, but it may be stated that vitamin D has a favorable influence on calcium and phosphorus metabolism.

5. The vitamin D requirement is greatest during the period of infancy. Beyond the age of infancy the exact vitamin D requirement of man under any specified conditions is not known but it appears that the requirement during pregnancy and lactation is increased.

Status of Vitamin E.—The Cooperative Committee recommended that the Council declare that there is no evidence to indicate that vitamin E has therapeutic merit and that the Council do not accept any vitamin E preparations.

Malt Preparations with Cod Liver Oil and Viosterol, Claimed to Contain Vitamins B_1 and G.—The Council maintains that if a preparation contains vitamins B_1 and G as well as A and D, in therapeutic amounts, it cannot be considered acceptable, since no evidence has been adduced to show that combinations of vitamins A, B_1, D and G are rational therapeutically or pharmaceutically. On the other hand, if the vitamins B_1 and G are natural contaminants in the vehicle, it is held that they are present in such small amounts as not to be therapeutically significant and claims for them may not be recognized.

The Cooperative Committee took the position that in the case of certain accepted preparations containing vitamins A, B (complex) and D the Council should not recognize claims for the vitamins B and G content in view of the insignificant amounts present. The Council endorsed the opinion of the Cooperative Committee and manufacturers of accepted products of this category have been informed that no claims for the vitamin B and G content of such preparations will be recognized, and that after Jan. 1, 1937, not even the statement that these vitamins are present should be made, because of the danger of arousing false implications.

High Potency Viosterol Preparations.—Inquiries have been received from various sources concerning the marketing of high potency viosterol preparations, particularly for use in the treatment of rheumatism. The Cooperative Committee felt that experimentation with products in cases of arthritis is susceptible to so many misinterpretations that those making inquiry should be advised to use great caution in such experiments, and that the use of very high potency preparations by general practitioners at this time is not to be commended.

Inquiries have been received from a manufacturer of pharmaceuticals and Dr. C. I. Reed whether or not the Council would suggest to the Wisconsin Alumni Research Foundation that it encourage the sale of high potency viosterol preparations to the physician by granting their licensees the privilege to market such high potency preparations.

The Council concurred in the Cooperative Committee's recommendation that the manufacturer and Dr. Reed be advised (1) that the Council is never opposed to experimental investigations under proper directions and facilities, but that the Council does not feel that there is at this time sufficient evidence to warrant the acceptance of viosterol preparations of very high potency; and (2) that it declines to suggest to the Wisconsin Alumni Research Foundation that the marketing of such high potency preparations to the medical profession by its licensees is advisable.

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

TETANUS TOXOID, ALUM PRECIPITATED.—Tetanus Anatoxin.—A preparation of tetanus toxin after the formaldehyde detoxifying procedure of Ramon whereby the toxic action is greatly diminished with no loss of antigenic potency. Alum precipitation furthers this action by freeing the antigenic substance from the reaction-producing proteins of the culture medium.

Actions, Uses and Dosage.—Tetanus toxoid is recommended for the production of active immunity to tetanus. One cc. is injected subcutaneously, preferably in the region of the deltoid. Approximately three months later the second and final injection of 1 cc. is given. The immunity thus produced is reasonably persistent. However, it has been shown that, if some time after the original immunization a single injection of 1 cc. of toxoid is given, there results a prompt (within two weeks) and marked rise in the antitoxic titer of the serum. Thus, in cases of injury to persons previously immunized, an injection of tetanus toxoid may suffice to protect against tetanus in place of the usual tetanus antitoxin. It should be borne in mind that in these cases several weeks is required, following the second injection of toxoid, before immunity may be assumed to be well established. Therefore, in any dubious instance the conservative course is the administration of antitoxin. Active immunization to tetanus would appear to be a desirable procedure in the case of individuals whose work subjects them to a greater than normal hazard of the disease.

The National Drug Co., Philadelphia.

Refined Tetanus Toxoid (Alum Precipitated).—Marketed in packages of two 1 cc. vials (one immunization treatment); and in packages of one 10 cc. vial (five immunization treatments).

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

FRANKLIN C. BING, Secretary.

CELLU BRAND CARROTS, WATER PACKED

Distributor.—Chicago Dietetic Supply House, Inc., Chicago.

Packer.—Eugene Fruit Growers Association, Eugene, Ore.

Description.—Canned carrots, packed in water.

Manufacture.—Selected carrots are topped, washed, preheated to loosen the skin, mechanically peeled, inspected, trimmed, graded and hand packed in cans. Small carrots are packed whole; large sizes are diced, quartered or sliced. The cans are filled with water, heated, sealed and processed.

Analysis (submitted by distributor).—

	per cent
Moisture	90.3
Total solids	9.7
Ash	0.8
Fat (ether extract)	0.3
Protein (N × 6.25)	1.0
Crude fiber	1.0
Starch (diastase method)	5.3
Carbohydrates other than crude fiber (by difference)	6.6

Calories.—0.3 per gram; 9 per ounce.

Claims of Manufacturer.—Choice quality carrots packed without added sugar or salt. For use in special diets in which sugar or salt is proscribed or in quantitative diets of calculated composition.

STEPHENS BRAND GRAPEFRUIT JUICE

Manufacturer.—Natural Food Products Company, Orange, Calif.

Description.—Canned Arizona and California grapefruit juice, retaining in high degree the natural vitamin C content.

Manufacture.—Arizona and California tree-ripened grapefruit is thoroughly washed, inspected, automatically cut and reamed. The juice is strained, deaerated, treated with ultraviolet rays for inactivation of enzymes, vacuum sealed and heat processed.

Analysis (submitted by manufacturer).—

	per cent
Moisture	88.3
Total solids	11.7
Ash	0.4
Fat (ether extract)	0.2
Protein (N × 6.25)	0.7
Reducing sugars as invert sugar	5.8
Nonreducing sugars as sucrose	2.2
Crude fiber	0.1
Carbohydrates other than crude fiber (by difference)	8.9
Titratable acidity as citric acid	1.4

Calories.—0.5 per gram; 14 per ounce.

Vitamins.—Chemical determination (iodine titration) of cevitamic (ascorbic) acid shows 0.5 mg. per cubic centimeter.

Claims of Manufacturer.—Practically equivalent to fresh juice in vitamin C. For all table and dietary uses of fresh juice.

MILL BROOK BRAND EVAPORATED MILK

Distributor.—Winner Market, Lock Haven, Pa.

Packer.—The Page Milk Company, Merrill, Wis.

Description.—Unsweetened evaporated milk. The same as Page Brand Evaporated Milk (THE JOURNAL, May 30, 1931, p. 1872).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 16, 1936

THE ARMY MEDICAL LIBRARY

William H. Welch once asserted that the Army Medical Library and its *Index Catalogue* are America's greatest gift to medicine. Sir William Osler was so grateful for its services that he gave to the library the manuscript of his farewell address delivered at Johns Hopkins University. From a small collection of books placed in the office of Surgeon General Lovell a hundred years ago the Army Medical Library has grown to be today the largest medical library in the world.[1]

The century of growth cannot be reviewed without reference to an incident in the life of John Shaw Billings, an army surgeon. When writing his graduating thesis at Miami Medical College, Billings had difficulty in finding statistics on the results of certain surgical operations. For six months he ransacked the libraries in Cincinnati, Philadelphia, New York and elsewhere. He became convinced that there was not a medical library in the country in which a student would find a large part of the literature relating to any medical subject. This experience led him, when the opportunity came years later, to establish for American physicians a medical library and an index that would spare them the drudgery of consulting thousands of texts to find a dozen useful references. Billings began his great work of collecting and cataloguing medical literature in 1868, with a few thousand dollars left over from the Civil War hospital funds turned over to him by the surgeon general. He envisioned the greatest undertaking in bibliography that had ever been done in any scientific field. In 1876 he published a specimen catalogue of the library and submitted it to the medical profession for criticism. In style and arrangement this "Specimen Fasciculus" was practically the same as that of the *Index Catalogue* of today. Billings continued the preparation of the *Index Catalogue,* and at length Congress appropriated funds for the printing. Three complete series of the *Index Catalogue,* comprising many volumes, have been published. Volume one of the fourth series has gone to press and will appear during 1936, to mark the hundredth birthday of the Army Medical Library. These volumes catalogue and index all the meritorious medical books, theses and articles that have been published throughout the world. In 1895, when the first series of the *Index Catalogue* was completed, Billings left the army and devoted himself to consolidating and cataloguing the public libraries in New York City and later to the organization of the Carnegie Institution in Washington.

Billings established in 1879 another monumental work, the *Index Medicus,* which provided monthly a classified record of the current medical literature of the world. Its classification was more general and less subdivided than that of the *Index Catalogue.* The *Index Medicus* was never a government publication. The subscribers were limited chiefly to medical libraries, and there were financial difficulties from the start. About 1899, when the founders could no longer continue publishing the *Index Medicus,* Osler made a plea before a meeting of the American Medical Association for physicians to subscribe in order to keep it alive. In 1903 the Carnegie Institution at Washington took over the *Index Medicus* and continued to sponsor its publication until 1927, when it was merged with the *Quarterly Cumulative Index,* which had been published by the American Medical Association since 1916. The combined index has since been known as the *Quarterly Cumulative Index Medicus.*

The amount of space occupied by the Army Medical Library in Washington during the early years was so small that the boxes of books had to be opened in the yard. Congress then appropriated $200,000 for a building, and in 1887 the present three story building occupied by the library and museum at Seventh and B streets S.W. was opened to the public. That building has been occupied for fifty years and has long since been outgrown. The overflow of books now crowds the basement and every nook. The need for a larger building was so obvious as long ago as 1919 that Congress purchased a new site for the library at the Army Medical Center on the outskirts of Washington.

The Army Medical Library has now more than 941,181 volumes. It has about 19 per cent as many volumes as the great Library of Congress, and yet it receives about 9.8 per cent as large an annual appropriation for purchases. It has some of the rarest books in the world. Of about 600 medical incunabula known, it has 450. The Army Medical Library has the only known copy of some medical works. It contains a more complete file of French theses than the Library of the Medical Faculty of Paris.

In addressing the International Medical Congress in London in 1881, Billings said: "If the entire medical literature of the world, with the exception of that which is collected in the United States, were now to be destroyed, nearly all of it that is valuable could be reproduced without difficulty."

1. Hume, E. E.: The Centennial of the World's Largest Medical Library: The Army Medical Library of Washington, Mil. Surgeon **78:** 241 (April) 1936.

"FULL STEAM" OR CAUTION IN SOCIAL SECURITY

When the Committee on the Costs of Medical Care brought in its final report, THE JOURNAL [1] pointed out that the choice seemed to lie with the medical profession and the public as to whether or not changes in the nature of medical practice were to come by evolution or by revolution. In the years that have elapsed, the public seems wisely to have chosen to proceed cautiously and carefully rather than to order "full steam ahead." Nevertheless, proponents of socialized medicine continue to urge and to make propaganda for the revolution that the medical profession and the public want to avoid. Conspicuous among those who demand haste are Michael Davis, representing the Rosenwald Foundation; Nathan Sinai, who has at various times represented various groups, and Dr. Hugh Cabot, who seems mostly to represent himself.

In a recent discussion on the subject of social security, held in the Graduate School of Business Administration of Harvard University, these three proponents of speed again stated their points of view. Dr. Cabot did not hesitate to say that the medical profession does not seem to be able to fit itself into an economic age and that it should long since have realized that it must become a business and cease to be a profession. Mr. Sinai deplored the manner in which his plans for Michigan had been opposed and indicated his impression that the medical profession in this county is an obstructionist body. Mr. Davis, who has on previous occasions stated his belief that medicine proceeds on a bicycle while civilization proceeds in an airplane, again bemoaned the delay of the American medical profession in adopting some of the plans which he and his associates of the Rosenwald Foundation have been so busily pushing during the last four years. In the course of their discussions, these proponents of socialized medicine condemned the principles adopted by the House of Delegates of the American Medical Association at the Cleveland and subsequent sessions as being planned to delay rather than to hasten progress. Any one familiar with the changes that have occurred, with the experiments that are now under way, and with the statements made by representatives of organized medicine during the past three years, will know that the allegations of these three propagandists are not warranted. The studies made by the Bureau of Medical Economics of the American Medical Association indicate that already many an ill founded and unwarranted experiment in changing the nature of medical practice has failed and disappeared. As yet there is no scientific evidence to indicate that any one of the plans now in effect represents the ideal.

The substantial progress of medicine has been brought about by a system of trial, of test and experiment, which is itself responsible for the substantial character of the progress. There is no more reason why medicine should discard its scientific methods in performing social experiments than there is reason for discarding scientific methods and embarking on wishful thinking in the laboratory and faith-healing in the hospital. Reckless experimenters in the so-called social sciences may shout "full steam ahead!" The organization and structure of scientific medicine is more likely to be salvaged from the wreckage into which many of the other social and economic organizations are plunging by observing the caution which medical leaders know is imperative for a safe advance.

1. The Committee on the Costs of Medical Care, editorial, J. A. M. A. **99**: 1950 (Dec. 3) 1932.

CITRIC ACID IN METABOLISM

Among the more striking recent advances in nutrition are those concerned with the physiologic significance of the less well known constituents of plant and animal tissues. These substances are likely to be overlooked entirely when a dietary component is evaluated for nutritional purposes on the basis of the conventional food analysis alone. Thus the various carotenes and kryptoxanthine, which appear as natural pigments in plants, are now known to be precursors of vitamin A; the traces of copper, manganese and zinc occurring in plant and animal tissues and previously receiving little if any attention have been demonstrated to be indispensable for nutritive well being in the body; the small amounts of the nitrogenous base choline, which is rather widespread in food substances but which heretofore has been looked on as a pharmacologic agent with limited application, is now known to exert a profound influence in certain phases of the metabolism of fat in the mammalian organism. In this category of less well known constituents of natural food substances are certain known, and doubtless other as yet unrecognized, organic acids and their salts. Malic, tartaric, oxalic, citric, benzoic and quinic acids have long been known to occur in plant saps and acid fruits and berries; the salts of some of these acids have received considerable attention because in the course of metabolism they are transformed to bicarbonate and thus promote alkalinization of the body fluids. Renewed attention has recently been directed to citric acid, however, and some unsuspected facts have been discovered with respect to its metabolism.

Citric acid is a constituent of animal tissues and body fluids. It was isolated from milk in 1888 and the quantity has subsequently been found to be from 1 to 4 Gm. per liter. It occurs constantly in human urine and has been found in the urine of many species of the lower animals. It is a constituent of blood, the ratio of distribution between plasma and cells in the dog being approximately 1.6.[1] Citric acid has been found in the aqueous humor, saliva, cerebrospinal fluid, the secretion of the male sex organs, and amniotic fluid. The output in urine is invariably increased by administration of alkali or of salts of organic acids that

1. Pucher, G. W.; Sherman, C. C., and Vickery, H. B.: J. Biol. Chem. **113**: 235 (Feb.) 1936.

increase the p_H of the urine. After meals the concentration in the urine is augmented, although this is independent of the change in reaction of the urine.[2] That citric acid is synthesized by the organism has been demonstrated by recent studies of Sherman, Mendel and Smith.[3] Three dogs were given a citrate-poor ration along with sodium bicarbonate for periods varying from eighteen to forty-five days. In these animals the excess citric acid excreted over that ingested was 5.2, 10.3 and 7 Gm. respectively over the entire experimental period. It was also observed in the course of this study that the concentration of citric acid in the urine after administration of bicarbonate was elevated to a far greater extent than was that in the blood, a fact suggesting active participation by the kidney in the process.

In further studies[4] the Yale investigators have shown that the body possesses a large capacity to oxidize citric acid. In different experiments in which the animals were maintained on a citrate-poor ration, amounts of from 0.5 to 2 mg. per kilogram of body weight were oxidized to the extent of more than 99 per cent. Under these conditions, i. e., when the free acid was given, there was no effect on the urinary p_H. Sodium citrate, on the other hand, produced a marked increase in the alkalinity of the urine.

The close parallelism between the excretion of citric acid and the change in reaction of the urine has suggested that it partakes in the biochemical mechanism whereby the acid-base balance of the body is regulated. Possibly it represents the end product of a type of metabolism emphasized only under certain conditions. Thus far the attempts to correlate the formation of citric acid with the metabolism of any one of the major foodstuffs have not been notably successful. The elucidation of the metabolic significance of this compound thus remains an alluring problem.

2. Kuyper, A. C., and Mattill, H. A.: J. Biol. Chem. **103**: 51 (Nov.) 1933.
3. Sherman, C. C.; Mendel, L. B., and Smith, A. H.: J. Biol. Chem. **113**: 247 (Feb.) 1936.
4. Sherman, C. C.; Mendel, L. B., and Smith, A. H.: J. Biol. Chem. **113**: 265 (Feb.) 1936

Current Comment

REGISTRATION UNDER HARRISON NARCOTIC ACT

Every physician registered under the Harrison Narcotic Act must reregister on or before July 1 with the collector of internal revenue of each district in which he maintains an office or a place for the treatment of patients. Failure to reregister within the time allowed by law adds a penalty of 25 per cent to the annual narcotic tax payable at the time of registration and in addition makes the physician in default liable to a fine not exceeding $2,000, or to imprisonment for not exceeding five years, or to both. The Commissioner of Internal Revenue has been so lenient in the past in enforcing the criminal penalties provided by the act that many physicians seem to have assumed that promptness in reregistration is not material. Year after year they have registered tardily. Since repeated warnings have failed to correct the situation, the commissioner has recently given negligent or recalcitrant physicians the choice between paying substantial sums by way of compromise in lieu of the penalties for their offenses or, as an alternative, accepting criminal prosecution, with resultant publicity and liability to fines of indefinite amounts and possibly imprisonment. This was an act of grace on the part of the commissioner, since he might have instituted criminal prosecutions without allowing the offending physicians any choice in the matter. If the course that the commissioner has adopted does not produce the desired promptness in registration, he will have no recourse other than criminal prosecution to attain that result. If tardiness in registration results in criminal prosecutions, with incidental publicity and the possibility of fine and imprisonment, physicians will recognize that ample notice has been given them.

DERMATITIS FROM WRIST WATCH STRAPS

The number of substances that have been alleged to produce dermatitis when placed in contact with the skin of sensitive persons is not small. Within the past few months, two substances that may be present in commonly used materials, lip stick and adhesive plaster, have been added to this list.[1] A recent report [2] describes still another possible source of dermatitis-producing agents; namely, wrist watch straps. An investigation of the material was begun because of a number of complaints received by a certain watch manufacturing concern that the straps used on their watches were causing irritation of the skin. The straps on which complaints were made came from one particular lot and other straps of the same lot produced dermatitis varying in severity from an erythema to severe inflammation when tested on volunteers who worked in the factory. The leather used in the manufacture of the straps was traced to its source and the methods of tanning and dyeing were studied. It was learned that all the straps in the offending lot were dyed by a different process from those previously supplied, because of a request from the watch manufacturer for a strap of "fast black color and sweat proof," and that the dyes used contained amyl black and "Oil Yellow T" (amido azotoluene). Patch tests on volunteer factory workers were then made with samples of the strap at each stage of preparation in order to ascertain the identity of the irritating ingredient. The untreated, tanned leather did not cause dermatitis, nor did the leather after treatment with the "thinner" or with the lacquer. However, severe dermatitis was observed in a number of the subjects receiving applications of the dyed leather. Further patch tests demonstrated that the dye amyl black was inert but that the dermatitis was due entirely to the second dye, amido azotoluene. This study clearly shows that the dye amido azotoluene

1. Skin Irritants in Adhesive Plaster, Current Comment, J. A. M. A. **105**: 603 (Aug. 24) 1935; Lip Stick Dermatitis, ibid. **106**: 470 (Feb. 8) 1936.
2. Schwartz, L.: Dermatitis from Wrist Watch Straps, Pub. Health Rep. **51**: 423 (April 10) 1936.

should not be used in the preparation of leather for such articles as gloves, shoes, hat bands and wrist watch straps, which are worn next the skin. Such undesirable occurrences as the outbreak of dermatitis just described should afford sufficient reason for urging manufacturers to test adequately for possible dermatitis-producing effects such products as are designed to be applied to or worn next the skin before they are released for use by the public.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—At a meeting of the Sixth Councilor District Medical Society in Prescott, recently, the speakers were Drs. Grandison D. Royston on "Importance of Symptoms in Pelvic Disorders"; Joseph Hoy Sanford, "Obscure Abdominal Pain—Importance of Urinary Tract Investigation"; Joseph W. Larimore, "The Ileocecal Segment," and Ernest Sachs, "Early Diagnosis of Brain Tumors." All are of St. Louis.——In an exchange program, recently, members of the Pulaski County Medical Society, all of Little Rock, addressed the Sebastian County Medical Society: Drs. William V. Newman, on "Sulfur Treatment of Arthritis"; Robert A. Milliken, "Arthrodesis," and Henry F. DeWolf, "Etiology and Pathogenesis of Inflammatory Stricture of the Rectum."——Among others, the Ouachita County Medical Society was addressed at Camden, recently, by Drs. Herbert A. Durham, Shreveport, La., on "Fractures of the Femur," and Marion D. Hargrove, Shreveport, "Auricular Fibrillation."——Dr. Willis C. Campbell, Memphis, discussed diseases of the knee joint before the Union County Medical Society, recently, and Dr. John W. Harper, El Dorado, varicose veins.

CALIFORNIA

University News.—Dr. David A. Wood has been promoted to associate professor of pathology at Stanford University School of Medicine, San Francisco, effective September 1, and Drs. Alvin J. Cox Jr. and Carleton Mathewson Jr. to assistant professors of pathology and surgery, respectively.

Plague-Infected Ground Squirrel.—The director of public health of California has reported that plague infection has been proved in a ground squirrel received at the laboratory March 28. This squirrel was found south of Camarillo in Ventura County, according to *Public Health Reports*.

Society News.—The San Francisco County Medical Society was addressed, May 12, by Drs. William Dock and Emmet Rixford on "Hemolytic Nature of Pernicious Anemia" and "Dumb-Bell Tumor of the Spinal Column."——Dr. Joel T. Boone, San Diego, commander, medical corps, U. S. Naval Hospital, San Diego, will address the Hollywood Academy of Medicine, May 21, on the "Reflections of a White House Physician."——The Los Angeles Neurological Society has begun publication of its own bulletin, to be issued quarterly.——A symposium on ovarian cysts was presented before the Alameda County Medical Association, April 20, by Drs. Paul P. E. Michael, Thomas Floyd Bell and Edward N. Ewer, Oakland.

CONNECTICUT

Dr. Greenway to Retire at Yale.—Dr. James C. Greenway, who has been director of the department of university health at Yale, New Haven, since it was established in 1916, will retire in June and will be succeeded by Dr. Orville F. Rogers, who is now assistant director of the department. Dr. Greenway graduated from Yale in 1900, taking his degree in medicine at Columbia University College of Physicians and Surgeons in 1904. Dr. Rogers has been associated with the university department of health since its organization and has been assistant director since 1921. He graduated from Harvard Medical School, Boston.

Nearly Four Hundred Cases of Scarlet Fever.—Three hundred and ninety cases of scarlet fever have been reported to the New Britain Board of Health in an outbreak having its onset in the latter part of December. The disease ran an unusually mild form, it was stated, resulting in a large number of parents not calling a physician; consequently the patients were mingling with others and spreading the disease. A daily inspection was instituted in the schools and all children found with a rash or desquamating were excluded and referred to the board of health. The board of education closed the schools for two weeks, but this action was not recommended by the department of health, it was stated.

Study of Laws Relating to Automobile Accidents.—A temporary commission has been appointed in Connecticut to study financial responsibility laws as they relate to automobile accidents, according to the *New England Journal of Medicine*. Members of the commission are Michael A. Connor, motor vehicle commissioner, John C. Blackall, insurance commissioner, and Superior Court Judge Frank P. McEvoy. Informal meetings have been held with various groups. At a meeting, March 9, representative physicians from the eight counties of the state revealed that hospitals in Connecticut are losing money caring for persons injured in automobile accidents who have no means of paying for their treatment. In many of these cases, it was stated, the responsible person carries no liability insurance and the hospital has no means of collecting its costs.

FLORIDA

Personal.—Dr. Shaler A. Richardson, Jacksonville, has been appointed a member of the state board of health, succeeding the late Dr. Harry Dash Johnson, Daytona Beach.——Dr. James Maxey Dell, Gainesville, was recently appointed superintendent of the Florida Farm Colony for the Feebleminded to succeed the late Dr. James H. Colson.——Dr. Leonidas M. Anderson, Lake City, completed fifty years in the practice of medicine, March 18. He is a past president of the Florida Medical Association.

ILLINOIS

State Medical Meeting in Springfield.—The eighty-sixth annual meeting of the Illinois State Medical Society will be held in Springfield, May 19-21. Physicians presenting the program will include:

Louis C. Kress, Buffalo, Radiation Therapy and Uterine Cancer.
James H. Hutton, Chicago, Low Dosage Irradiation of the Pituitary and Adrenals for Treatment of Non-Nephritis Hypertension.
Thomas Kirkwood, Lawrenceville, The Recrudescence of Malaria.
Leon Unger, Chicago, Allergy of the Eye, Ear, Nose and Throat.
Clarence O. Sappington, The Etiologic, Diagnostic and Medicolegal Problems of Occupational Diseases.
G. Howard Gowen, Chicago, Effectiveness of the Oral Administration in the Common Cold.

A symposium on amebiasis will be presented Wednesday morning; speakers will include Mr. Joel I. Connolly, Chicago; Dr. Samuel E. Munson, Springfield; Dr. Bertha Kaplan Spector, Chicago; Dr. Arthur E. Mahle, Wilmette; Dr. Gatewood, Chicago; Dr. Andrew R. Mailer, Galesburg, and Dr. Eugene F. Traut, Chicago. A symposium on vascular diseases will be offered Thursday morning by Drs. Clarence Elliott Bell, Decatur; Katharine H. Chapman, Sherman L. Shapiro, George W. Scupham, Ford K. Hick, all of Chicago, and Edward W. Cannady Jr., East St. Louis; Earl R. Crowder, Evanston; Clarence B. Ripley, Galesburg, and George H. Woodruff, Joliet. Dr. Ralph A. Kinsella, St. Louis, will deliver the oration in medicine Tuesday on "The Career of a Heart," and Dr. George W. Crile, Cleveland, the oration in surgery, Wednesday, on "Critical Review in 822 Operations on Adrenal Sympathetic System, with Special Reference to Essential Hypertension."

Chicago

Ricketts Prize Awarded.—The Division of Biological Sciences, University of Chicago, awarded the Howard Taylor Ricketts Prize of 1936 to John P. Fox for research in pathology and to Dan H. Campbell, Ph.D., for research in bacteriology. The award is announced each year on May 3, the anniversary of the death of Dr. Ricketts, bacteriologist of the University of Chicago, who died of typhus fever while studying this disease in Mexico City.

Society News.—Dr. Richard B. Capps, among others, addressed the Chicago Society of Internal Medicine, April 27, on "Observations on Venous Tone and Blood Flow in the Hand: Special Reference to the Reflex Effect of a Noxious Stimulus."——Dr. Hugh H. Young, Baltimore, discussed "Urological Problems of General Interest" before the Engle-

wood Branch of the Chicago Medical Society, May 9. Dr. Fred W. Rankin, Lexington, Ky., discussed "Treatment of Carcinoma of the Lower Bowel" before the Englewood branch, April 7.——Dr. Newton D. Smith, Rochester, Minn., addressed the North Shore Branch of the Chicago Medical Society, April 7, on "Importance of Proctoscopy" and Dr. John S. Lundy, Rochester, "Various Methods of Anesthesia, with Special Reference to the Newer Anesthetic Agents."

INDIANA

Health at Evansville.—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended May 2, indicate that the highest mortality rate (23.3) appears for Evansville and for the group of cities as a whole, 13.2. The mortality rate for Evansville for the corresponding period last year was 13.6 and for the group of cities, 12.1. The annual rate for eighty-six cities for the eighteen weeks of 1936 was 13.6 as against a rate of 12.6 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

Society News.—Dr. Herman L. Kretschmer, Chicago, discussed urologic problems in childhood before the Northeastern Indiana Academy of Medicine in Kendallville, March 26.——Dr. George J. Garceau, Indianapolis, discussed "Treatment of Fractures" before the Fayette-Franklin County Medical Society in Connersville, April 14.——At a meeting of the Henry County Medical Society in Newcastle, April 16, Dr. Cyrus J. Clark, Indianapolis, spoke on "Valvular Heart Disease and Electrocardiograms."——At a meeting of the Carroll County Medical Society in Delphi, April 16, Dr. Max A. Bahr, Indianapolis, discussed "Dynamic Factors in Mental Disease."——A symposium on cardiovascular disease was presented before the Vanderburgh County Medical Society in Evansville, April 14.——At a meeting of the St. Joseph County Medical Society in South Bend, April 1, Dr. Harold F. Dunlap, Indianapolis, discussed the thyroid.——Dr. Joseph W. Ricketts, Indianapolis, addressed the Fountain-Warren Counties Medical Society in Kingman, April 2, on diseases of the rectum and anus.——The Hendricks County Medical Society was addressed in Danville, March 24, by Dr. Cyrus J. Clark, Indianapolis, on heart diseases.——At a meeting of the Marshall County Medical Society in Plymouth, April 1, Dr. Clyde M. Fish, South Bend, read a paper on rectal diseases.——Dr. Max A. Bahr addressed the Indianapolis Medical Society, April 14, on "Personality vs. Environment" and Dr. Jackson T. Witherspoon presented a paper on "The Female Sex Hormones and Their Clinical Application."——Dr. Homer H. Wheeler, Indianapolis, discussed rectal diseases before the Tippecanoe County Medical Society in Lafayette, April 14.

MARYLAND

State Medical Meeting and Election.—Dr. Arthur M. Shipley, Baltimore, was elected president of the Medical and Chirurgical Faculty of Maryland, April 29, at its one hundred and thirty-eighth annual meeting in Baltimore. Drs. Harvey B. Stone, Baltimore; William A. Gracie, Cumberland, and Robert Lee Hall, Pocomoke City, were elected vice presidents, and Drs. Walter D. Wise and Joseph Albert Chatard, both of Baltimore, were reelected secretary and treasurer, respectively. Speakers included Drs. Frederick D. Chappelear, Hughesville, retiring president, on "The General Practitioner and the Future," and Howard E. Ashbury, Leopold Clarence Cohn, William Neill Jr. and Dean D. Lewis, on cancer. The Trimble lectures were delivered by Drs. Allen Graham, Cleveland, and Thomas M. Rivers, New York; their subjects were respectively "Cancer of the Breast: Prognosis in Surgical Treated Patients" and "Diseases of the Central Nervous System Caused by Viruses." The dedication of the John Ruhräh Memorial Room took place Wednesday evening, following a buffet supper. Dr. Ruhräh willed his library of 1,500 volumes to the faculty, with a fund. The will stated that the interest of the fund was to provide for a book plate and the purchase of books, journals and other items relating to the diseases of children, medical history, biography and bibliography. The room, described as a replica of Dr. Ruhräh's "workshop," contains his nonmedical books; his medical volumes have been placed in the regular files of the faculty. The memorial room contains period furniture, two etchings and a cartoon owned by Dr. Ruhräh. The dedicatory address was made by Dr. George Washington Mitchell.

MASSACHUSETTS

New Health Unit.—A new health unit has been organized in Franklin County to serve the towns of Monroe, Rowe, Heath, Charlemont, Irving and Shutesbury. The unit, which began to function April 1, will be maintained by federal and state funds until other towns join, it was reported. Dr. Walter W. Lee, North Adams, is in charge.

Medical Pageant.—"The Story of Early Medicine in Massachusetts" was depicted in a pageant presented at the Rutland State Sanatorium by students of Tufts College Medical School, April 30, under the auspices of the Wachusetts Medical Improvement Society. Mr. James Ballard, director of the Boston Medical Library, presented an exhibition of medical books in connection with the pageant.

Personal.—Harry R. De Silva, Ph.D., Amherst, has resigned as professor of psychology in charge of the psychologic laboratory, Massachusetts State College, to join the staff of the bureau for street traffic research of Harvard University. He will conduct research on the constructive aspects of controlling the motor car driver.——Dr. Albert M. Wigglesworth, for eleven years on the staff of the Veterans' Hospital, Rutland, has been transferred to the Veterans' Hospital, Oteen, N. C. He was presented with a framed testimonial by patients at the Rutland institution.——Dr. Edwin M. Mahoney was elected secretary of the newly appointed health board of Holyoke; other members are Arthur Hebert, chairman, and Dr. Joseph W. Wonsik.

Awards for Research in Psychiatry.—Announcement of the winners of annual awards for the best papers embodying research in psychiatry completed during the year 1935 was made at the annual meeting of the New England Society of Psychiatry, April 22. Dr. Benjamin Cohen of the staff of Grafton State Hospital received an award for his paper "Repression and Communicability in Catatonic Stupor"; Tamara Dembo, Ph.D., and Eugenia Hanfmann, Ph.D., Worcester State Hospital, for their paper entitled "The Patient's Psychological Situation on Admission to a Mental Hospital," and Drs. Benjamin Simon, Worcester State Hospital, and Philip Solomon, Boston Psychopathic Hospital, for their paper on "Multiple Sclerosis." Dr. Abraham Myerson, Boston, was the principal speaker and his subject was "The Neuroses." Dr. Winfred Overholser, commissioner of Massachusetts Department of Mental Diseases, Boston, was elected president for the ensuing year.

MICHIGAN

Annual Clinic.—The Ingham County Medical Society conducted its annual clinic in the Olds Hotel, Lansing, April 23. Guest speakers included:

Dr. Louis G. Herrmann, Cincinnati, New Methods of Treatment of Endarteritis and Other Vascular Diseases of the Extremities.
Dr. James G. Carr, Chicago, Prognosis in Heart Disease.
Dr. Loyal Davis, Chicago, Treatment of Wounds Involving the Peripheral Nerves.
Dr. Russell L. Haden, Cleveland, Blood Dyscrasias.

At the dinner, Dr. Clay R. Murray, New York, discussed "Ambulatory Treatment of Fractures."

Society News.—At a joint meeting of the Wayne County Medical Society and the Detroit Society of Neurology and Psychiatry, April 6, speakers were Drs. Thomas J. Heldt and David R. Clark, Detroit, on sidestepping responsibilities via drugs and alcohol, respectively. A symposium on traumatic surgery was presented before the county medical society, April 27, by Drs. Albert S. Crawford, Arche C. Hall and Archibald D. McAlpine. Dr. John A. Toomey, Cleveland, discussed "Epidemic Meningitis: Its Differential Diagnosis from Other Forms of Meningeal Irritations" before the Wayne County Medical Society, April 20.——At a meeting of the Sanilac County Medical Society in Croswell, April 7, Dr. Clark D. Brooks, Detroit, spoke on "Surgical Disease of the Biliary Tract."

Personal.—Dr. Raymond B. Allen, newly appointed dean of Wayne University College of Medicine, Detroit, will be guest of honor at a dinner given by the Wayne County Medical Society, May 18.——Dr. Theron S. Langford, Ann Arbor, president of the Washtenaw-Livingston Boy Scout council for the past three years, was presented with an award for scout leadership, at a dinner in Ann Arbor recently.——Dr. William M. Tappan has been made health officer of Holland, succeeding Dr. William Westrate.——Dr. Walter E. Mercer, for four years health officer of Webberville, has been placed in charge of the bureau of child health of the Lansing department of health.——Dr. Henry G. Berry, Mount Clemens, has recently completed fifty years in the practice of medicine.——Dr. Charles P. Drury, health officer of Marquette, was guest of honor at

a farewell dinner given in Iron Mountain recently by the Dickinson-Iron County Medical Society. Dr. Drury took over his duties as health officer, April 1, succeeding the late Dr. Frederick McD. Harkin. He has been secretary of the county medical society for eight years. Dr. Joseph A. Crowell, president of the medical society, was toastmaster.——Georges Miquelle, director of the Wayne County Medical Society Orchestra, was presented with an honorary membership in the society, March 30. The occasion was the first annual concert of the orchestra and the society's glee club.

MINNESOTA

Society News.—The eleventh annual dinner of the Sanatorium Commission and the fifth annual joint meeting of the Wabasha and Winona county medical societies was held at Buena Vista Sanatorium, Wabasha, March 16; speakers were Drs. William W. Will, Bertha, president, state medical association, on problems of the state association; Mr. R. R. Rosell, St. Paul, substituting for Dr. Edward A. Meyerding, St. Paul, "Social Security Programs Pending in Minnesota"; Dr. Charles H. Watkins, Rochester, "Practical Treatment of Anemias," and Dr. Frank J. Heck, Rochester, "Infectious Mononucleosis."——At a meeting of the Hennepin County Medical Society in Minneapolis, April 15, speakers were Drs. Gilbert J. Thomas on "Nonspecific Infections of the Prostate Gland" and Virgil J. Schwartz, "Dyspnea and Dysphagia of Unusual Origin." At the meeting, April 22, Drs. Ernest L. Meland and Rood Taylor discussed "Transurethral Prostatic Resection" and "Infant Feeding" respectively.——The Minnesota Academy of Medicine was addressed in Minneapolis, April 8, by Henry E. Hartig, Ph.D., associate professor of electrical engineering, University of Minnesota, and Dr. Horace Newhart on "Practical Applications of Acoustics in Medicine."——Dr. Ernst A. Pohle, Madison, Wis., addressed the Minnesota Radiological Society in St. Paul, March 28, on "Radiological Treatment of Leukemia and Allied Disorders."

MISSISSIPPI

Society News.—At a recent meeting of the Central Medical Society in Jackson speakers were Drs. Leon S. Lippincott, Vicksburg, on "Carcinoma of the Cervix Uteri"; Harley R. Shands, Jackson, "Chronic Primary Tuberculosis of the Spleen," and William H. Anderson, Booneville, "Anesthesia."

Graduate Course in Obstetrics.—Dr. Maxwell E. Lapham, state department of health, Jackson, is conducting a graduate course on obstetrics in the Gulfcoast section, under the auspices of the Mississippi State Medical Association. The counties of Jones, Forrest, Perry, Lamar, Pearl River, Harrison, Stone, Hancock and Jackson are included in the circuit. One hour is devoted to lectures and one to clinical demonstrations and round table discussions. The first lecture was given in Laurel, March 30.

NEBRASKA

State Medical Meeting and Election.—Dr. Roy W. Fouts, Omaha, was chosen president-elect of the Nebraska Medical Association at its sixty-eighth annual meeting in Lincoln, April 7-9, and Dr. George W. Covey, Lincoln, was installed as president. The next annual meeting will be held in Omaha in May 1937. Guest speakers were:

Dr. James R. McCord, Atlanta, Ga., Maternal Mortality.
Dr. Archibald L. Hoyne, Chicago, Should Every Doctor Be Equipped to Do Spinal Fluid Examinations? Treatment of Meningococcic Meningitis Without Intraspinal Therapy.
Dr. Sumner L. S. Koch, Chicago, Injuries of the Hand; Osteomyelitis of the Bones of the Hand.
Dr. Max Cutler, Chicago, Incidence of Cancer—Is It Increasing or Decreasing?
Dr. Fred M. Smith, Iowa City, Prognosis and Certain Aspects of the Treatment of Coronary Artery Disease; Is the Increasing Death Rate from Heart Disease Apparent or Real?
Dr. William T. Coughlin, St. Louis, What Qualifies a Doctor to Do Major Surgery; Surgical Treatment of Gallbladder Disease.
Dr. Frank D. Dickson, Kansas City, Mo., Importance of Immediate Splinting of Fractures.
Dr. John P. Koehler, Milwaukee, Prevention and Treatment of Scarlet Fever; Family Physician's Place in a Public Health Program.
Dr. Ralph M. Carter, Green Bay, Wis., New Activities of the State Medical Society of Wisconsin.
Dr. Philip W. Brown, Rochester, Minn., Is There Such a Thing as Nervous Indigestion? Clinical Considerations of Cholecystitis.

In a symposium on fractures, speakers were Drs. Dickson, Carter, Myron O. Henry, Minneapolis, and John R. Nilsson, Omaha. The cancer committee of the state association conducted a cancer hour, with the following speakers: Drs. Cutler, John Marshall Neely, Lincoln; Louis E. Moon, Omaha, and Alfred P. Syndhorst, Grand Island. Dr. William W. Bauer, Chicago, director, Bureau of Health and Public Instruction, American Medical Association, was the speaker at the annual meeting of the Woman's Auxiliary, on "Health Education versus Health Racketeering."

NEW YORK

University News.—Dr. Bret Ratner addressed the bacteriology and hygiene departments of Teachers' College, Columbia University, April 22, on "The Nature and Basic Mechanism of Allergy."

State Medical Election.—Dr. Charles H. Goodrich, Brooklyn, was chosen president-elect of the Medical Society of the State of New York at the recent annual meeting, and Dr. Floyd S. Winslow, Rochester, was installed as president. Vice presidents are Drs. Guy S. Carpenter, Waverly, and Moses A. Stivers, Middletown, and Dr. Peter Irving, New York, is secretary. The next annual meeting will be held in Rochester. The President's Medal, a newly established honor of the society, was presented to the retiring president, Dr. Frederic E. Sondern.

Society News.—Dr. Henry D. Niles, New York, addressed the St. Lawrence County Medical Society at Ogdensburg and the Jefferson County Medical Society, Watertown, April 16, on "Diagnosis and Treatment of Common Skin Diseases."——Dr. James K. Quigley, Rochester, addressed the Chemung County Medical Society, Elmira, April 8, on practical obstetrics. Dr. Russell L. Cecil, New York, spoke on pneumonia, April 15.——The annual joint meeting of the Onondaga Medical Society and the Onondaga County Bar Association was held in Syracuse, May 2, with Dr. Floyd S. Winslow, Rochester, as the guest speaker.——Drs. Walter A. Reynolds and Emanuel Martin Freund addressed the Medical Society of Albany County, April 22, on "Hypertension in Children and Young Adults" and "Furunculosis of the External Auditory Canal" respectively.——Dr. Howard Lilienthal discussed "Intrathoracic Suppuration" before the Medical Society of the County of Nassau, April 28.

New York City

Eighth Harvey Lecture.—Dr. Ivan deBurgh Daly, professor of physiology, University of Edinburgh, Scotland, will deliver the eighth Harvey lecture at the New York Academy of Medicine, May 21. His subject will be "The Physiology of the Bronchial Vascular System."

Hospital Department to License Private Institutions.—The Municipal Assembly unanimously adopted and the mayor approved, March 20, a measure authorizing the department of hospitals to license all private proprietary hospitals, sanatoriums, nursing homes, convalescent homes, homes for the aged or for chronic patients, or other private proprietary institutions for medical, nursing or custodial care. Licenses are to be issued for one year and the institutions are subject to inspection by the hospital department.

Dr. Ladd Named Dean of Cornell.—Dr. William S. Ladd, associate and acting dean of Cornell University Medical College, has been appointed dean; he has also been named professor of medicine. Dr. Ladd graduated from Columbia University College of Physicians and Surgeons in 1915. He resigned from the Columbia faculty in 1931 to become assistant professor of clinical medicine and associate dean at Cornell.

Three Million Dollars for Cancer Hospital.—The General Education Board has given $3,000,000 to the Memorial Hospital for the Treatment of Cancer and Allied Diseases to erect a new twelve story hospital building adjacent to the Rockefeller Institute, according to the New York *Times*. When this structure is completed, it will house the entire facilities of the Memorial Hospital. With a capacity of 200 beds as compared with the present capacity of 110 beds, the new building will occupy the block bounded by East Sixty-Seventh and Sixty-Eighth streets, York and First avenues, near the East River. It is planned to start construction this fall. Memorial Hospital, founded in 1884, is said to be the oldest special cancer hospital in America; it has been affiliated with Cornell University Medical College since 1913. Last year it accepted 3,200 patients for treatment. It has a daily average of 325 patients coming to the hospital and its nine clinics and x-ray and radium departments. Nearly 96,000 outpatient visits were recorded last year, and 11,000 active cases are now being cared for by the hospital.

Society News.—Speakers before the Richmond County Medical Society, Staten Island, in March, were Drs. Joseph H. Diamond, on treatment of asthma; Herbert A. J. Cochrane, paleopathology, and Enrico C. Soldini, subacute bacterial endocarditis.——Dr. Eugene L. Opie was recently elected president of the Harvey Society; Dr. Philip Smith, vice president;

Dr. Thomas N. Rivers, treasurer, reelected, and Dr. McKeen Cattell, secretary.——The name of the *Health Examiner*, published by the New York Academy of Medicine, has been changed to *Preventive Medicine*.——At the stated meeting of the New York Academy of Medicine, April 2, a symposium on diseases amenable to splenectomy was presented by Drs. Allen O. Whipple, who spoke on "The Advantages of the Combined Clinic in Middle Ground Disease"; Daniel Brown and Robert H. E. Elliott Jr., "Idiopathic Thrombocytopenic Purpura"; Louis M. Rousselot, "The Rôle of Congestion (Portal Hypertension) in the Banti Syndrome and the Response to Splenectomy," and William P. Thompson, "Hemolytic Jaundice—Its Recognition, Treatment and Behavior." Dr. Gregory Shwartzman gave the twentieth Friday afternoon lecture, April 3, on recent advances in treatment of bacterial infections.—— Dr. George B. Dorff, Brooklyn, addressed the Medical Society of the County of Queens, April 17, on "Hormone Treatment of the Imperfectly Developed Testicle."

NORTH DAKOTA

State Medical Meeting at Jamestown.—The forty-ninth annual meeting of the North Dakota State Medical Association will be held at Jamestown, May 17-19, at the Gladstone Hotel, and under the presidency of Dr. Archibald D. McCannel, Minot. At the annual banquet Monday evening Dr. Jay A. Myers, Minneapolis, among others, will discuss "Modern Methods in Tuberculosis Control." Other speakers on the program include the following physicians:

Henning M. Berg, Bismarck, Radiographic Studies of Fractures of the Extremities.
Elmer G. Wakefield, Rochester, Physiology of the Colon, with Medical Aspects of Carcinoma.
Charles W. Mayo, Rochester, Carcinoma of the Colon.
Frederic E. B. Foley, St. Paul, Surgical Treatment of Hydronephrosis.
Henry E. Michelson, Minneapolis, Common Skin Diseases.
George E. Hudson, Minneapolis, Endocrine Therapy in Gynecology.
Frederick A. Willius, Rochester, Prognosis in Coronary Thrombosis.
Frederick C. Rodda, Minneapolis, Artificial Feeding in the New-Born.
Donald McCarthy, Minneapolis, Coronary Artery Diseases.
Ralph E. Weible, Fargo, Diverticulitis of the Colon.

OHIO

Hanna Lecture.—Dr. Ivan de Burgh Daly, professor of physiology, University of Edinburgh, Scotland, will deliver the Hanna Lecture of the Academy of Medicine of Cleveland, May 25, on "Intrinsic Mechanisms of the Lung."

Personal.—Dr. John Srail Jr., assistant superintendent of the Clark County Sanatorium, Springfield, has been made superintendent to succeed Dr. Jay D. Thomas, who resigned.—— Dr. Aaron H. Smith has resigned as superintendent of Pleasant View Sanatorium, Amherst.——Dr. Howard E. M. Boocks, Logan, has been appointed health officer of Logan County and Dr. Henry C. Lindersmith, Sherwood, of Defiance County.—— Dr. Thomas F. Humphrey has resigned as resident physician at the Ohio Soldiers' and Sailors' Orphans' Home Hospital, Xenia. Dr. Ernest W. Ekermeyer, assistant resident, will succeed Dr. Humphrey.——Dr. Colston L. Dine, Minster, entertained the Auglaize County Medical Society at dinner, April 1, celebrating the fiftieth anniversary of his medical practice.—— Dr. Oliver T. Sproull, West Union, observed the fiftieth anniversary of his graduation from the College of Physicians and Surgeons of Baltimore, March 22.

OKLAHOMA

State Medical Election.—Dr. Samuel A. McKeel, Ada, was chosen president of the Oklahoma State Medical Association at its recent annual meeting in Enid, and Dr. George R. Osborn, Tulsa, was installed as president. The next annual meeting will be held in Tulsa.

Changes in the Faculty.—The department of epidemiology and preventive medicine of the University of Oklahoma School of Medicine, Oklahoma City, has been changed to the department of hygiene and public health with Dr. Onis G. Hazel as head, according to the state medical journal. Dr. Willis K. West was named acting head of the department of orthopedic surgery during the leave of absence of Dr. Samuel R. Cunningham, and Dr. Lee K. Emenhiser, acting head of the department of anatomy, has been granted a leave of absence to continue graduate study. Dr. Lawrence C. McHenry has resigned as assistant professor of otology, rhinology and laryngology. These changes were approved at a meeting of the board of regents of the University, April 1.

PENNSYLVANIA

Personal.—Dr. Robert R. Hays, senior assistant physician at Pennhurst State School, has resigned to become assistant superintendent of the Blair County Home and Hospital, Hollidaysburg.——Dr. John B. Carrell, Hatboro, recently celebrated the sixtieth anniversary of his graduation from Jefferson Medical College, Philadelphia.

Philadelphia

Meeting of Obstetricians.—The Obstetrical Society of Philadelphia was host to the New York Obstetrical Society, the Pittsburgh Obstetrical and Gynecological Society, the Obstetrical Society of Boston and the Washington Gynecological Society, April 2. Clinics were conducted at various hospitals during the day, followed by a dinner at the University Club in the evening. Dr. William A. Jewett, Brooklyn, presided and Dr. Robert L. De Normandie, Boston, discussed maternal mortality.

Medical Exhibits in Community Fund Exhibition.—Preceding the annual campaign for funds by the Community Fund and the Federation of Jewish Charities, an exhibition showing the work of the agencies concerned was held in the municipal auditorium, March 16-22. Among the exhibits was an operating room in which surgeons performed actual operations four times a day, newspapers reported. Other exhibits included a medical laboratory and a pharmacy, occupational therapy and the work of the visiting nurse.

Personal.—Dr. Leroy M. A. Maeder has resigned as medical director of the Pennsylvania Mental Hygiene Committee to devote his full time to private practice.——Dr. and Mrs. Edgar M. Hewish celebrated their fiftieth wedding anniversary, April 15. Dr. Hewish has also been practicing medicine for fifty years.——Dr. Charles J. Hatfield, director, Henry Phipps Institute, University of Pennsylvania, has been appointed official representative of the National Tuberculosis Association for the conference of the International Union Against Tuberculosis in Lisbon, Portugal, September 7-10.

Pittsburgh

Mellon Lecture.—Dr. Frank C. Mann, director, division of experimental surgery and pathology, Mayo Clinic, Rochester, Minn., delivered the nineteenth Mellon Lecture under the auspices of the Society for Biological Research, University of Pittsburgh School of Medicine, April 30. His subject was "The Rôle of the Liver as the Commissariat of the Body."

Society News.—Drs. Robert M. Entwisle and deWayne G. Richey addressed the Pittsburgh Academy of Medicine, April 14, on "Lympho-Epithelioma of the Tonsil" and "Indications for Splenectomy" respectively.——Dr. John W. Stinson spoke on "A New Procedure in Herniorraphy" at a meeting of the Pittsburgh Surgical Society, April 17; Dr. John H. Alexander reported a case of tuberculous granuloma of the cecum and Dr. Gustav F. Berg presented a motion picture on open reduction in fractures.——At the annual meeting of the Allegheny County Medical Society in Pittsburgh, April 21, Drs. Marlin W. Heilman, Tarentum, Pa., presented "A Clinical Laboratory Study of Heat Diseases"; Robert L. Anderson, "Prostatic Resection"; Walter C. Alvarez, Rochester, Minn., "Helpful Hints in the Diagnosis of Puzzling Types of Indigestion," and Temple Fay, Philadelphia, "Recent Observations on the Mechanism of Headache." The evening session was addressed by Dr. Fay on "Why Do We Laugh?" and Dr. Alvarez, "How to Fit a Diet to a Dyspeptic." Dr. Catharine MacFarlane, Philadelphia, was guest speaker at a meeting of the society, in March, on "Dysfunctional Uterine Bleeding."

RHODE ISLAND

Personal.—Dr. James J. Flanagan has been appointed medical examiner for Cranston and Johnston, succeeding Dr. Daniel S. Latham. The latter held the position nearly thirty years. He has served in both houses of the state legislature and is at present public health superintendent of Cranston.

Society News.—Dr. Kenneth K. Kinney, Williamantic, addressed the quarterly meeting of the Washington County Medical Society, Westerly, April 8, on bone tumors.—— Drs. Roger I. Lee, Boston, and Albert H. Miller, Providence, addressed the Providence Medical Association, April 6; their subjects were "Coronary Thrombosis" and "Diaphragmatic Respiration Recorded by a Synchronous Pneumograph" respectively.

WISCONSIN

Society News.—Dr. Willard O. Thompson, Chicago, addressed the Racine County Medical Society, March 19, on goiter.——Dr. John S. Coulter, Chicago, discussed "Physical Therapy in Arthritis" at a meeting of the Outagamie County Medical Society, Appleton, March 31.——Dr. Arnold S. Jackson, Madison, chairman of the committee on goiter, State Medical Society of Wisconsin, addressed the Rock County Medical Society, Janesville, March 24, and the Fond du Lac County Medical Society, March 19, on "Prevention of Endemic Goiter in Wisconsin."——At a meeting of the Eau Claire-Dunn-Pepin County Medical Society, March 30, speakers were Drs. Ralph M. Waters, Madison, on "Inhalation Anesthesia"; Arnold S. Jackson, Madison, "Prevention of Goiter," and Gjermund Hoyme, Eau Claire, "Ten Minutes of Medical News."——Dr. Erwin R. Schmidt, Madison, addressed the Trempealeau-Jackson-Buffalo Counties Medical Society, in Arcadia, March 19, on "Diseases of the Liver and Gallbladder."——Dr. Samuel F. Haines, Rochester, Minn., was the guest speaker at a meeting of the Polk County Medical Society, Osceola, March 19, on diseases of the thyroid.

PUERTO RICO

Lectures at School of Tropical Medicine.—Mr. Perry Burgess, president of the Leonard Wood Memorial Foundation, recently lectured at the School of Tropical Medicine of the University of Puerto Rico, which is under the auspices of Columbia University. Mr. Burgess described the work of the foundation toward the eradication of leprosy. Dr. William Thornwall Davis, Washington, D. C., spoke at the school on "The Orthoptic Treatment of Squint." Edmund V. Cowdry, Ph.D., professor of cytology, Washington University, St. Louis, spoke recently on "Nuclear Changes Caused by Viruses."

GENERAL

Traffic Safety Program.—The National Congress of Parents and Teachers during March launched a program of traffic safety education to reduce highway accidents. Emphasis will be placed on sponsorship of standard schoolboy safety patrols; proper marking for streets approaching schools; strict observance of laws governing minimum age for young automobile drivers; instruction in automobile driving for high school students; cooperation with police in securing maximum protection at school crossings; support of the drivers' license law, and improvement of school bus facilities. Miss Marian Telford, national chairman of safety for the congress, who is the consultant on child safety and director of field activities for the National Safety Council, is directing the work.

Fund for Medical Aid.—A trust fund will be set up under the will of the late Addison H. Gibson, Pittsburgh, to procure medical aid for impoverished ill persons and to help deserving young men obtain a college education, according to the New York *Times*. One half of the estate, valued at about $2,300,000, will be used to procure medical aid or hospital facilities for poor and needy persons, although the trustees are also permitted to donate directly to hospitals or other institutions furnishing such aid. The will stipulates that the other half will be used for loans to worthy young men desiring a college education. A low rate of interest is to be charged in these instances, the will states, although this too depends on the discretion of the trustees.

Fund for Grants in Medical Sciences.—The National Research Council announces that a limited fund is available for grants in medical sciences. Applications must be submitted to the secretary, division of medical sciences of the council, 2101 Constitution Avenue, Washington, D. C., on or before October 1 to be considered at the November meeting. At the April meeting of the committee the following grants were made:

Peter Heinbecker, assistant professor of surgery, Washington University School of Medicine, the mechanism of the altered response of smooth musculature to exogenous epinephrine.

Albert P. Krueger, associate professor of bacteriology, University of California Medical School, Berkeley, studies on the nature of bacteriophage.

Charles Phillip Miller, associate professor of medicine, University of Chicago, the immunologic properties and toxicity of some chemically isolated fractions from meningococcus.

Carl C. Speidel, Ph.D., professor of anatomy, University of Virginia School of Medicine, Charlottesville, observations on nerve and striated muscle fibers subjected to centrifuging at high speeds.

Ernst A. Spiegel, professor of experimental and applied neurology, Temple University School of Medicine, the function of the cortical labyrinth centers and their relation to the subcortex.

Since the funds which have been placed at the disposal of the National Research Council during the past few years for the making of research grants have been discontinued, there will be no further meetings of the committee on grants-in-aid.

Medical Bills in Congress.—*Changes in Status:* H. Res. 460 has passed the House, authorizing the Speaker to appoint a committee of five members to investigate the activities of the departments, bureaus, boards, commissions, independent agencies, and all other agencies of the executive branch of the government with a view to determining whether any such agencies should be coordinated or abolished. The House and Senate have adopted the report of the conferees on H. R. 11035, the war department appropriation bill, which report authorizes the reestablishment of medical units in the Reserve Officers' Training Corps. H. R. 12527, the navy department appropriation bill, has passed the Senate. A provision in the bill authorizing an appropriation to start construction of a naval medical center in Washington was stricken from the bill by the Senate. H. R. 12556 has passed the House, proposing to create a Treasury Agency Service. The bill does not propose to transfer to the newly created Treasury Agency Service the functions now exercised by the Bureau of Narcotics, as did the bill of which H. R. 12556 is a redraft, but authorizes the Secretary of the Treasury to coordinate the functions conferred on the new service with the functions of investigation, detection, or prevention of the violations of the narcotic laws conferred or imposed by law on the Bureau of Narcotics.

Society News.—At the annual meeting of the American Association of Pathologists and Bacteriologists in Boston, April 9, Dr. Nathan C. Foot, New York, was made president and Dr. Earl B. McKinley, Washington, D. C., vice president. The next annual meeting will be in Chicago.——Dr. Frederic T. Lewis, Boston, was elected president of the American Association of Anatomists at the annual convention at Duke University, Durham, N. C., April 11. The 1937 convention will be at the University of Toronto, Canada, April 25-27.——The National Conference on Visual Education and Film Exhibition, formerly known as the DeVry Summer School of Visual Education, will be held at the Francis W. Parker School, Chicago, June 22-25.——The American Association for the Study of Goiter will hold its annual meeting in Chicago, June 8-10; with headquarters at the Drake Hotel, under the presidency of Dr. Julius R. Yung, Terre Haute, Ind. Clinics will be conducted at the morning sessions, and papers will be presented by the following physicians: James B. Collip, Montreal; Willard Owen Thompson, Chicago; Jacob Lerman, Boston; William T. Salter, Boston; John de J. Pemberton, Rochester, Minn.; Saul Hertz, Boston; James H. Means, Boston; Frederick A. Coller, Ann Arbor, Mich.; James H. Hutton, Chicago; Nathan A. Womack, St. Louis; Warren H. Cole, St. Louis; Henry S. Plummer, Rochester, Minn.; James A. Lehman, Philadelphia; Arthur E. Hertzler, Halstead, Kan.; Thomas C. Davison, Atlanta, Ga.; David Henry Poer, Atlanta; Charles H. Arnold, Lincoln, Neb.; Frank H. Lahey, Boston; Frederick S. Wetherell, Syracuse, N .Y.; Alfred H. Noehren, Buffalo; George E. Beilby, Albany, N. Y.; John C. McClintock, Arlington Heights, Ill.; D. Roy McCullagh, Ph.D., Cleveland, and H. J. Perkin, Boston.

CANADA

Personal.—Dr. James S. Baxter, assistant professor of anatomy at McGill University Faculty of Medicine since 1934, will leave for England soon, where he will join the staff of the University of Cambridge, *Science* reports.

Dr. Fleming Named Dean at McGill.—Dr. Albert Grant Fleming, professor of public health and preventive medicine and director of the department, has been appointed dean of McGill University Faculty of Medicine, Montreal, to succeed Dr. Charles F. Martin, who retires August 31, having reached the age of 67 years. J. C. Simpson, LL.D., secretary of the faculty of medicine and chairman of the committee on physical education, will fill the newly established position of associate dean. Dr. Fleming, who is 48 years of age, graduated from the University of Toronto Faculty of Medicine in 1907. Last year he was appointed secretary to the health insurance committee of the British Columbia College of Physicians and Surgeons.

Society News.—The Health League of Canada has recently been formed to replace the Canadian Social Hygiene Council and will include other aspects of public health in its program. Dr. Gordon A. Bates, Toronto, for many years associated with the original organization, is director.——Dr. Alexander Randall, Philadelphia, addressed the Toronto Academy of Medicine, March 3, on "Obstructive Uropathies."——Dr. Karl M. Wilson, Rochester, N. Y., addressed the Montreal Medico-Chirurgical Society recently on maternal mortality.——Dr. Walter C. Alvarez, Rochester, Minn., addressed the medical profession of Winnipeg, February 5, on "Physiology of the Gastro-Intestinal

Tract."——The annual meeting of the Canadian Public Health Association will be in Vancouver, June 22-26, in conjunction with the Western Branch of the American Public Health Association and the Canadian Tuberculosis Association.

FOREIGN

International Orthopedic Meeting.—The congress of the International Society of Orthopedic Surgery will be held in Bologna, Italy, September 21-25. The last day will be spent in Rome, where orthopedic clinics will be arranged at a new clinic.

Dedication of Eastman Dental Dispensary.—The Eastman Dental Clinic of Stockholm, Sweden, given to the city by the late George Eastman, Rochester, N. Y., was to be dedicated April 25 in the presence of King Gustaf. This is the fourth of five European dental clinics for which Mr. Eastman gave $1,000,000 each, the first having been opened in London in 1931. The second was opened in Rome in 1933, the third in Brussels in 1935. It is expected that the last, which is to be in Paris, will be completed early in 1937. The cornerstone was laid in July 1935.

Congress for Experimental Cytology.—The fourth International Congress for Experimental Cytology will be held in Copenhagen, August 10-15. Subjects for the sessions will be experimental morphology, electrophysiology of the cell, experimental cell pathology and biology of irradiation, histochemical problems and cell metabolism and physical chemistry of the cell. Those desiring to present papers and demonstrations should submit the titles, together with brief summaries, before June 1. They are further requested to give exact information on the nature of the material to be demonstrated and the size of lantern films and cinema films. Those who plan to attend should notify Dr. Harald J. Okkels, secretary, Institute for Pathological Anatomy, 11 Frederik 51 Vej, Copenhagen, Denmark.

Plans Approved for Jerusalem Medical Center.—Plans with the Hebrew University in Jerusalem were recently approved by the building committee and it is expected that for the Rothschild-Hadassah-University Hospital to be affiliated construction will begin about July, according to Dr. Jacob J. Golub, New York, consultant to the committee. The new institution will be erected on a 25 acre plot on Mount Scopus overlooking the city. There will be three units, each three stories high: a 260 bed hospital, a graduate medical school and a nurses' training school. The teaching center will be named in honor of Dr. Nathan O. Ratnoff, New York, chairman of the American Jewish Physicians' Committee. Less than $200,000 is needed to complete the building fund, it was announced recently by the fund committee of Hadassah, the Women's Zionist Organization of America, which is sponsoring the medical center.

Society News.—The eleventh congress of the International Society of the History of Medicine will be held in September 1938 at Athens, Istanbul, Sophia and Zagreb. Subjects for discussion will be religious origins of hippocratic medicine, the hippocratic idea in modern medicine and medical folklore. At the tenth congress in Madrid in 1935 Dr. Gomoiu, Bucharest, was elected president and Dr. Guiart, Lyons, France, secretary.——Dr. Rudolph Matas, New Orleans, was chosen president of the International Society of Surgery at its meeting in Cairo, Egypt, Dec. 28, 1935. Dr. John Shelton Horsley, Richmond, Va., attended the meeting. The society will meet in Vienna in 1938.——The eleventh International Congress of Psychology will be held in Madrid, September 6-12.——The twenty-second annual conference of the National Association for the Prevention of Tuberculosis will be held in London, July 16-18.——An International Congress on Hepatic Insufficiency will be held at Vichy, France, Sept. 16-18, 1937, under the chairmanship of Prof. Maurice Loeper, Paris. The International Congress on Gastro-Enterology will be held in Paris, Sept. 13-15, 1937.——An International Sports Physicians' Congress will be held by the International Sports Physicians Association in Berlin July 27-August 1, just preceding the Olympic Games.——The first International Congress of Sanatoriums and Private Nursing Homes will be held in Budapest in September.

CORRECTION

Marriage.—THE JOURNAL, April 25, page 1510, reported the marriage of Dr. William Rudolph Hamsa of Iowa City to Miss Doris Sanborn of Scotia, Neb., recently; instead the notice should have read Rudolph Alfred Hamsa, D.D.S., of Scotia, Neb.

Government Services

Office of Public Health Education Established

The U. S. Public Health Services announces the establishment of the office of public health education, under Asst. Surg. Gen. Lewis R. Thompson, chief of the division of scientific research. The purpose is to carry out experimental studies in health education. Its initial activities will embrace the training and instruction of young commissioned officers of the service; special instruction for educators, health officers and sanitarians from state health departments and from health departments of foreign countries and for other eligible persons; the making of studies of educational methods employed in various health agencies and in other fields of education, with a view to adapting the methods to its own purposes, and to developing new and improved methods; the making of experimental studies in mass adult education, through the use of the radio for the purpose of evaluating various methods of radio education; the filing of permanent records of available material, to be a repository of authoritative information in the field of health education; preparation of a bulletin of current health information, primarily for the personnel of the service. The first copy of this bulletin, entitled "The Health Officer," has made its appearance with the May issue.

Annual Report on Traffic in Narcotics

According to the annual report of the commissioner of the bureau of narcotics, U. S. Treasury Department, $1,244,899 was appropriated to enforce federal narcotic drugs laws for the fiscal year ended June 30, 1935. During the year a uniform narcotic law, drafted and approved by the National Conference of Commissioners on Uniform State Laws at its annual conference in October 1932, was enacted in Kentucky, Louisiana, Rhode Island, South Carolina and Virginia. Florida, Nevada, New Jersey and New York had previously adopted this legislation. Since the report was written, twenty more states have adopted the law in its original or a modified form.

The annual report gives accounts of ninety-five seizures. The total quantity seized showed an increase of 51 per cent over the total for 1933. There is at present no lawful manufacture of prepared opium in the United States. The total quantity of morphine seized during the year was about 66 per cent less than that seized during the previous corresponding period. The illicit traffic in codeine has increased to a scale which demands notice. Up to the present, the report states, this traffic has been mostly supplied from Canada and is heaviest in the area surrounding Buffalo. Since Canadian authorities discontinued the indiscriminate sale of this drug at Fort Erie North, Ontario, more drug addicts than usual have applied to the Buffalo City Hospital for treatment. Illicit traffickers rely increasingly on the Far East for supplies not only of prepared opium, but also of morphine, heroin, and even cocaine. The increasing use of the Central American countries and the West Indies as bases for smuggling to the United States has caused no little concern. All the Central American countries except Guatemala and Panama are so used, and in West Indian Islands, West End and Bimini are generally used. There were 158 charges of violation placed against vessels. Of fifty defendants presented for prosecution, thirty-three were convicted and twelve acquitted. There were 4,742 persons reported for criminal violations; of these 1,833 were registered. Thirty-seven separate chemical analyses of morphine seizures, 110 analyses of heroin seizures, and nineteen analyses of cocaine seizures were made to determine the percentage of purity. Physicians whose narcotic permits were revoked numbered nineteen for conviction, and nine for addiction. During the week ended Dec. 9, 1934, the federal bureau of narcotics conducted a national drive against violators of the narcotic drug laws, resulting in the arrest of 441 persons. The drug seized in most cases was heroin (diacetylmorphine), generally in highly adulterated form. By March 15, 1935, some 211 of these persons had been convicted and sentenced to imprisonment by either state or federal courts. To reduce the use of narcotics in race horses, state racing commissions cooperated by having special stables erected at race tracks for conducting tests by veterinarians and chemists to determine whether horses were drugged. Many of the states require at least two tests daily of horses selected by the stewards. During the calendar year 1934, a total of twenty-two thefts of order forms was reported and the unaccounted losses reported totaled 154. Growing cannabis was discovered in and around Denver, Colo., Atlanta, Ga., Jacksonville, Fla., Tulsa, Okla., and a small plot was discovered and destroyed within the city limits of Brooklyn, N. Y. In the San Joaquin Valley, California, alone about 4,000 pounds of marihuana was destroyed.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 1, 1936.

The Care of the War Blinded

St. Dunstan's Hostel was founded for war-blinded men in 1915 by the late Sir Arthur Pearson and has had under care nearly 2,000 cases, while new cases still continue to come in. The average age of the men is a little over 45. It has been calculated that in twenty years there will still be 1,200 war blinded and that in forty years more than 400 may still be left. During the last few years there have been nearly 100 new cases —men who have only recently gone blind as the result of injuries in the war. Many have been due to mustard gas, and in the last two years fifteen such cases have been admitted. On the other hand, lacrimatory gas, though irritating to the eyes when discharged, does not seem to cause any permanent disability. Chlorine gas too, while dangerous to the lungs, does not seem to have been injurious to the eyes. Sir Arthur Pearson's main idea was to establish a hostel where blinded soldiers could be taught how to resume their places in civil life and, as far as possible, overcome their handicap. His enterprise has been a great success, largely because of the work of the welfare department, which looks after practically every business, family and domestic need of each man when he is settled in his own home again. It supplies the craftsman with raw material, tools and apparatus, and skilled instruction. Through a special sales department it sells the work he produces. It also watches over his health and that of his family.

An institution which is performing a valuable service for the blind in general is the National Library for the Blind, the reconstructed premises of which have been opened by the minister of health. The library provides for 11,000 blind readers, of whom about 8,000 receive their books by mail. The number of volumes circulated averages 1,500 a day. The reconstructed premises will house 250,000 volumes. The library has at present 186,000 volumes, representing 15,000 complete books.

International Congress of Physical Medicine

The government has invited twenty-five countries to send representatives to the sixth International Congress of Physical Medicine, to be held in London May 12-16. Several countries —Belgium, France, Hungary, the Netherlands, Russia and the United States—have formed organization committees and will be strongly represented. The scientific and clinical aspects of physical medicine will be discussed in seven sections: (1) kinesitherapy, (2) hydrotherapy and climatotherapy, (3) electrotherapy, (4) radiology, (5) actinotherapy, (6) radiology and (7) the teaching and organizing of physical medicine in medical schools. The meetings will be held at the Royal Society of Medicine, the Hall of the British Medical Association, and the British Institute of Radiology. There will be an exhibition of physical medicine apparatus at the College of Nursing. The president and chairman of the executive committee is Sir Robert Stanton Woods. The honorary president is Lord Horder. The secretary of the congress is Dr. Albert Eidenow, 4 Upper Wimpole Street, London, W. 1.

Safeguards Against Poisoning

Mr. H. N. Linstead, a member of the Poisons Board, addressed the Medico-Legal Society on safeguards against poisoning. He said that 892 persons died from poisoning in Great Britain in 1934, while the average number of deaths was 815 in the last ten years. Apart from coal gas (which was responsible for 1,000 suicides annually) saponated solution of cresol was the most common poison used for suicide and was taken in 300 cases; hydrochloric acid came next, with ninety cases. The needs had been shown for additional safeguards against barbiturates. The number of analogues of barbital introduced into medicine ran into hundreds. Each was introduced as a safe hypnotic but soon appeared in the statistics of deaths from poisoning. Analysis of national health insurance prescriptions showed that about 1 per cent were for barbiturates. Fatalities due to them were not large but had increased; the majority were suicides and nearly all the remainder accidents. New legislation provided that they should be supplied to the public only on medical prescription.

ACCIDENTS IN MANUFACTURE AND SALE OF DRUGS

From time to time accidents occurred in factories in which pharmaceutic preparations were made and might give rise to widespread poisoning. A few years ago a mixture was made up in concentrated form of chloroform and strychnine. The chloroform was not dissolved in the mixture but remained at the bottom with the greater part of the strychnine dissolved in it. Owing to the control exercised by the manufacturer, no serious form of general poisoning resulted. Accidents had occurred from the sale of disinfectants in sauce or whisky bottles or even in milk jugs. They had now to be sold in sealed containers.

ACCIDENTS FOLLOWING MEDICINAL USE

When poisons were taken medicinally, two contributory circumstances to ill effects were idiosyncrasy and the cumulative effect of taking them over prolonged periods. The effect of the regular taking of acetophenetidin in producing toxic jaundice had led to its inclusion in the "poisons list," so that it had to be labeled with cautionary words. The recent attention to the part played by aminopyrine in producing agranulocytic angina had led to restrictions that would bar its use in proprietary medicines. The nitrophenols and nitrocresols were liable to produce untoward results even in medicinal doses unless the basal metabolic rate was determined. At least one death had occurred in this country from the use of one of these drugs for slimming. They could now be supplied only on medical prescription. New regulations were made to render more difficult the obtaining of poison for murder and to facilitate detection. All pharmacies had to be registered and all sellers of poisons had to be listed by the local authorities. This would facilitate the task of the police in tracing supplies. But provisions had not been made to prevent the theft of drugs from the physician's car.

Improvement in Radium Technic

At the British Institute of Radiology, Mr. H. S. Souttar described a technic for protecting the operator using radium. The radium is automatically conveyed by pneumatic pressure through a flexible tube, while the operator remains at a distance until it is actually required. At the end of the tube is a lead cylinder 16 cm. in diameter with a conical cap for convenience of application. The radium is contained in a bobbin with rounded ends, which is conveyed by the tube. When not in use the radium lies in a safe, fully protected by lead, outside the treatment room. When required for treatment, air pressure is applied to drive the radium along the tube. Its arrival is announced by the lighting of a small electric lamp. When the two-way valve is reversed the air in the apparatus is exhausted and the bobbin is conveyed back to the safe. The whole adjustment of the apparatus can be carried out in the absence of the radium, which can be instantly brought into position when the treatment is begun. A further development of the system of pneumatic transference is that units of very small dimensions but containing large quantities of radium can be used with safety.

PARIS

(From Our Regular Correspondent)

April 14, 1936.

Bradycardia of Digestive Origin

Five cases illustrating different types of bradycardia of digestive origin were reported by Marchal, Soulie and Roy at the Dec. 20, 1935, meeting of the Société médicale des hôpitaux. These five cases demonstrated the following points:

1. In Loeper's case the bradycardia was associated with ulcer of the lesser curvature of the stomach; but Marchal believes it can occur with ulcerations elsewhere, especially in the first portion of the duodenum. According to Loeper, a bradycardia can be found in cancer of the colon and in enterocolitis. Marchal observed a bradycardia in two cases of duodenal ulcer, in a case of chronic gastritis and in a case of dysenteric colitis. Thus a syndrome of neuritis of the left pneumogastric nerve gives rise to a sinusal bradycardia in many different forms of ulcerative and nonulcerative gastro-intestinal lesions. The bradycardia in appendicular or colic lesions is probably due to some associated irritation of the right pneumogastric nerve.

2. The time of appearance of the bradycardia and of the attacks varies. In some cases it is observed during the period of development of the lesion and becomes more marked during periods of exacerbation of the pain or bleeding. In other cases the bradycardia precedes the localization of the ulcer and finally, as in Marchal's third case, its appearance was synchronous with that of the ulcer.

3. The type of bradycardia varies. In some, an attack may directly succeed a normal rhythm. Most commonly the bradycardia is of the sinusal type without modification of the PR or AC spaces.

4. The oculocardiac reflex may be weak or of the normal type or even accentuated. The atropine and effort tests are followed by an acceleration.

5. The nervous complications usually appear in the guise of pseudovertiginous, syncopal or epileptiform attacks. The association of these with a well marked sinusal bradycardia permits one to place these cases in the Stokes-Adams syndrome, but one must exclude such cases from this syndrome in which the syncope is due to severe bleeding.

Serologic Diagnosis of Brucellosis

Julien and Laurent read a paper on the biologic diagnosis of human and animal brucellosis by flocculation of serum in the presence of a specific antigen, at the January 28 meeting of the Academy of Medicine. The diagnosis cannot be made from clinical evidence alone; only laboratory tests enable a positive or at least a presumptive diagnosis to be made. The three tests that have been employed are blood culture, the serum agglutination test of Wright, and the intracutaneous reaction. Blood culture gives positive results only during febrile periods in from 10 to 15 per cent of cases. One must wait from seven to twenty days for positive cultures. The Wright test is the one most frequently employed. It happens that the use of antigens insufficiently tested and other technical difficulties results in the test being often reported as alternately negative and positive. At the recent brucellosis congress in Avignon a plea was made for standardization of the test. The seroagglutination test becomes positive only after a certain interval (from 15 to 21 days) and becomes negative again a few months after termination of the febrile period. The intracutaneous reaction is not above criticism. The authors' flocculation reaction is carried out with the aid of an alcoholic Brucella antigen. The technic is simple, can be easily standardized and appears to be specific. Of 111 serums, only thirty-nine from cases of proved human or animal brucellosis showed flocculation. Serums from seventy-two normal individuals or those suffering from other diseases were all negative. The details of the technic of this new flocculation test are given in the Jan. 28, 1936, issue of the *Bulletin de l'Académie de médecine*.

Precautions Against Attack by Enemy Airplanes

During the past six months, the frequent trials of earsplitting sirens make one realize that the civilian population of Paris is being trained to follow immediately the precautions outlined in a special circular distributed by the police department. In the corridor of every apartment a notice has been posted stating where to seek shelter in the neighborhood against poison gas and where the nearest fire station is located, which should be notified in case incendiary bombs have been dropped on a building. The bulletin of the police department states that no portion of France can be considered immune to aerial attack, although the larger centers of population will be involved first. A bombing airplane can transport from half a ton to a ton of bombs for a distance of 300 to 600 miles from their bases. Such modern engines of destruction can attain a speed of 150 to 200 miles an hour and can fly in all kinds of weather. Against explosive bombs a bomb-proof shelter must be sought; against incendiary bombs every modern method of extinction is to be employed; against poison gas only a shelter especially equipped or a mask is of any avail. Attention is called to the fact that civilians should not become panicky when they hear the sirens because an elaborate system of passive defense has been organized which will go into action as soon as enemy planes are signaled approaching the frontier. Unfortunately, in inclement weather, this is not easily accomplished. This was recently observed when trial attacks were made on London and Paris. Clouds so obscured the planes that a passive defense was practically impossible. The police department emphasizes that the enemy not only will attempt to destroy strategic points and large industrial points but counts on demoralization of the civilian population; hence the latter should be prepared to seek protection previously arranged. Every detail of how a civilian population can take precautions against aerial attacks is given in the police department circular.

Professor Mocquot Appointed Professor of Gynecology

Professor Mocquot, at present associate professor in the Faculté de médecine of Paris, has been appointed professor of clinical gynecology. This chair was formerly held by Prof. Jean Louis Faure, who retired when he reached the age limit in 1933, and more recently by the late Professor Proust, whose sudden death occurred in 1935.

Hundredth Anniversary of Death of Ampère

Meetings were held at Lyons, March 5-8, to commemorate the death in 1836 of one of the founders of modern electrical science, André-Marie Ampère. The meetings were attended by physicists, electrical engineers and representatives of the industrial side of electricity from a number of foreign countries, who read papers illustrating the applications of electricity. Ampère was born in a village near Lyons in 1775 and devoted his energies at first to a study of higher mathematics but later to all the basic sciences, especially physics and chemistry. In 1808 he was appointed professor at the Ecole polytechnique of Paris and in 1814 professor of physics at the College de France and member of the Institut de France, the latter one of the highest honors to be bestowed on a scientist in France. Ampère's most important contributions were his discovery of electrodynamics, which showed that there was an intimate relation of magnetism to electricity. He also maintained that the molecules of the body are the seat of constant internal indestructible electric currents, which act between each other and also toward ordinary current according to the laws of

electrodynamics, thus creating a starting point for present-day notions of electrophysiology and radiobiology. In 1820 Ampère called attention to the galvanometer to measure the intensity of a current by its action on a magnetized needle. Later he showed how electrical tension could be measured by the electrometer. He also discovered the astatic needle to eliminate the action of terrestrial electricity on the magnetized needle. Synchronously with Avogado he called attention to the atomic theory. Thus the latter and electromagnetism have become the bases of many modern theories. Modern medical electricity owes a great debt to the genius of Ampère.

BERLIN

(From Our Regular Correspondent)

March 25, 1936.

Amenorrhea Among Girls in Work Camps

A large section of the young female population of Germany is lodged in the work service camps. The principal object of these camps is to indoctrinate the girls with the social and political ideals of the National Socialist weltanschauung. An equalization of city dwellers and country dwellers also is attempted. Since the medical supervisors of these camps have reported a great many cases of chronic amenorrhea, the question arises whether or not the camp regimen is in any way responsible. The gynecologist A. Mayer has expressed himself on this problem in "Erbarzt." Mayer points to the fact that in boarding schools and among servant girls, nurses, female students and female athletes, change of residence or surroundings frequently leads to suppression of the menses. He raises the question whether the arbeitslagern exercise an effect similar to that of any new environment or whether there is some particular influence in camp life. There are two causative complexes: (1) constitutional factors that previously existed and (2) conditional factors that originate in the arbeitslagern. Age is an important constitutional factor. The younger the girls the greater the incidence of menstrual irregularity. Mayer distinguishes among girls from differing environments: big city, medium sized and small town, open country. Examinations conducted by Koch in Leipzig show that the menarche begins early among girls of the larger cities and that during the last twenty years menstruation has come to begin from one to two years earlier than before. Further causes of amenorrhea are asthenic constitution, pulmonary tuberculosis, and endocrine disorders involving the thyroid and pituitary bodies. The thyroid gland is held responsible for certain menstrual disorders as well as for a premature menopause. Moreover, according to Aschner, amenorrhea is more common among red-haired women and also among those having marbled skin and those with debilitated sympathetic nervous systems.

Among the causes conditioned by residence at camp, in addition to the psychologic influence, are climatic changes. Nothing definite has been determined with regard to climatic influence. Küstner has asserted that red light activates the sex hormone. Whether the change of diet leads to amenorrhea indirectly by avitaminosis is not known. It is hardly to be assumed, however, that sexual vitamins, as contained within certain plants, should be absent from the camp diet. The ergot content of flour, which in war time as a result of more complete milling conduces to "wartime amenorrhea," certainly plays no part at present. Mayer regards the concept of an amenorrhea due to fattening as arbitrary. It has already been established that the same endocrine disturbance may lead simultaneously to an arrest of ovarian function, a suspension of the menses and an excessive deposit of fat. The question of an "exhaustion amenorrhea" could be answered if one were able to observe such a disturbance in underexercised females following unaccustomed physical exertion. Suggestion appears to play an important part among further possible causes of amenorrhea. Lack of privacy in common sleeping quarters at the camps certainly must give rise to a desire on the part of the camper to conceal this natural function. A powerful wish to keep menstruation from hampering one's participation in the activities and routine of the camp would act in like manner. It is recognized that voluntary influence may effect modifications in the cycle. In many regions such suggestion is connected with old symbolic customs. In Switzerland, for example, on the eve of great popular festivals, the young girls are wont to bind a bright colored ribbon about one finger or affect some other symbol in order that their participation may not be hindered by menstruation.

Perhaps the sum total of relevant somatic and psychic factors as determined by inquiries and examinations in the arbeitslagern for females may shed some light on the causes of the seemingly increased incidence of amenorrhea.

The Ban on Schächten

The ban on schächten (slaughter according to the Jewish rite) which obtains in Germany as well as in other countries has meant a considerably reduced diet for those Jews who remain faithful to the letter of religious command. Consequently, institutions controlled by the Jewish religious community and hospitals in particular find it impossible to provide inmates or staff with abundant nourishment. According to the German legislation, warm-blooded animals must be stunned before slaughter. An electric current has frequently been used for rendering the animals senseless. If the full current is applied, as is customary, it is often strong enough to cause injury or death before the slaughter, properly speaking, has taken place. The German law does not prohibit the schächtschnitt (slashing of the animal's throat by the kosher butcher) as commanded by the ritual, if the animal has first been stunned. A section of Jewry is inclined to accept as kosher the meat of animals that have undergone stunning by electricity prior to slaughter by the schächter's knife. The utterance, before a continuation class for Jewish physicians at Frankfort, of Dr. Gustav Oppenheim, directed the attention of the Jewish commission in Berlin for study of the schächt problem to the results obtainable with electronarcosis. Oppenheim has been able by means of an apparatus which he devised to produce long-sustained periods of narcosis in animals, which subsequently experience a complete restitutio ad integrum. This means that the beast may be stunned by electrical shock without any damage to its flesh. The proper religious authorities, however, have failed to understand. Perhaps the final word has yet to be spoken.

Fate of the Prematurely Born

The program of health conservation which the Germany of today is carrying out has as its fundamental ideal the breeding of a superior race and the prevention of hereditarily diseased progeny. It should be to the interest of such a government to determine whether measures designed to preserve the lives of prematurely born infants are compatible with its political philosophy. An instructive article by Hans Henning has been published in the *Reichsgesundheitsblatt* entitled "The Value of Preserving the Prematurely Born." Six hundred and fifty prematurely born infants were observed at the children's clinic of the University of Frankfort from 1925 to 1930. It was established that life expectancy was in direct proportion to weight at birth. The mortality of the premature infants in relation to weight at birth was as follows: less than 1,000 Gm., 100 per cent; 1,200 Gm., 98 per cent; 1,500 Gm., 83 per cent; 2,000 Gm., 48 per cent; from 2,000 to 2,500 Gm., 35 per cent. It was proved, however, that the developmental possibilities

of the surviving children were not conditioned by weight at birth. Follow-up examination of eighty-one children showed that beyond the sixth year of life no difference whatever was perceptible between the prematurely born and children born at full term. In infancy the prematurely born are especially likely to present umbilical and inguinal hernias, which, however, usually disappear as the musculature is strengthened. Almost without exception the children presented rickets. About 10 per cent showed defective intelligence and even in the mentally normal the beginning of speech and of walking came later than in children born at full term. Premature infants afflicted with syphilis almost all die. Although at the children's clinic 4.8 per cent of the patients admitted from 1914 to 1925 were syphilitic, the proportion was reduced to 2.3 per cent (or by more than half) from 1925 to 1930. Of further importance is the fact that children exhibiting retarded beginnings of speech were found in most instances to have been brought up in institutions. The monotonous environment of the orphanage lacked those stimulations to speech which are present in even the poorest family circle. There is no absolute connection between premature birth and premature death. Mortality in the first week is generally due to spinal and cerebral hemorrhages suffered during parturition. Since the question of the value of preserving the lives of premature infants can be answered in the affirmative, such preservation may be considered as within the scope of governmental policy.

SWITZERLAND

(From Our Regular Correspondent)

March 17, 1936.

International Medical Week in Switzerland

The first "International Medical Week in Switzerland" was held at Montreux. This convention was promoted by the *Schweizerische medizinische Wochenschrift* and its editor, Prof. A. Gigon of Basel. The idea was to bring together in central Europe prominent foreign investigators and the leading medical scholars of Switzerland for informal professional cooperation and personal contacts. Switzerland, a neutral country, maintains five universities (besides several hochschulen and other separate faculties), which enjoy an excellent reputation. The Swiss universities have always been in the habit of calling foreign scholars to the professorial chairs. Also they have always emphasized the international importance of science. The total number of participants at the congress was more than 300, sixteen countries being represented. When one considers that this was the first such meeting, this attendance may be regarded as outwardly gratifying, all the more so in view of the unexpected obstacles which foreign participation encountered. These took the form not only of those stringent foreign exchange regulations in some European states which restrict freedom of intercourse beyond their own frontiers but of sudden demands and prohibitions in the matter of racial doctrine, which were based not on scientific proofs but on political considerations. These demands emanated from the German national führer of medicine and were directed against the well known Viennese clinician Prof. Julius Bauer, whose scholarly views on problems of race and genetics are so diametrically opposed to those of the present political leadership of medicine in the German reich. By intricate diplomatic negotiation, the ministries concerned were able to obtain an eleventh hour revocation of the ban on attendance at the convention, which had been imposed on German physicians. Still, such interferences are not conducive to good feeling, even in the case of a purely scientific congress.

The convention enjoyed the full approval and sponsorship of the Swiss government. The minister of education himself as representative of the federal council convened the gathering and presided over the first session. The papers were submitted according to group; each daily session was devoted to a different topic.

The first day was dedicated to "General Therapy." Prof. Sir Henry Dale of London discussed the "Pharmacology of Ergot." He spoke of the new alkaloids that have been isolated one after another in various quarters. A certain confusion still exists with regard to this question. Dudley and Moir isolated "ergometrine" in London. Stoll in Basel isolated "ergobasine." The isolation of an apparently similar alkaloid was recently reported from America. To all appearances, ergometrine and ergobasine are to be considered as identical substances. [The Council on Pharmacy and Chemistry (The Journal. March 21, p. 1008) has adopted the nonproprietary name "ergonovine" for the new oxytocic alkaloid from ergot.] After a lively discussion Dale and Stoll agreed on a joint examination of the substances in order that their identity might be finally determined. This was one of the important accomplishments of the convention.

Prof. W. Straub of Munich spoke of "One Hundred and Fifty Years of Digitalis Therapy." The glucosides of Digitalis lanta are formed in the same manner as those of Digitalis purpurea excepting that they are magnified by a residue of acetic acid. New glucosides to aid cardiac action can perhaps be obtained by the introduction of sugar into stearins. Straub emphasized the need for a completely organized pharmacology of the diseased heart.

The Berne surgeon Prof. F. de Quervain discussed "Scientific Bases for Goiter Prophylaxis."

The second day's session dealt with "Vitamins and Hormones." The Zurich chemist Prof. R. Karrer furnished a summary of the more recent developments in vitamin research. He stated that the customary, more or less sharp distinction between vitamin and hormone should be abolished. He pointed out that vitamin B_1 produces the hormone of growth in the lower fungi. In rats, mannose produces the provitamin for vitamin C, cevitamic acid. Tenuous distinctions also exist between vitamins and enzymes. The lines of demarcation between vitamins and hormones will become increasingly indistinct as our knowledge of these substances progresses.

Prof. Friedrich von Müller of Munich spoke on "Recent Opinions on Obesity, How It Originates and How It May Be Combated."

Prof. Ernst Laqueur of Amsterdam spoke on "Male and Female Hormones." In designating the action of sex hormones that exist simultaneously one might employ the term "synergy" instead of "antagonism." The following example supports this change: The activity of the male hormone in the seminal vesicle is increased by the presence of estrogenic substance. The older theory of counteraction between male and female hormones contains some elements of truth; the action of estrogenic substance on the prostate, for example, is hindered by a simultaneous and abundant supply of male hormone. Prof. Emil Abderhalden of Halle spoke on "The Interdependence of Vitamic and Hormonic Needs in Certain States."

Prof. H. E. Sigerist of Baltimore discussed "The Present Uneasiness in the Medical Profession." He raised the question of whether or not there is an actual plethora of physicians and concluded that, from an economic point of view, the supply is more than adequate, but insufficient if the extension of medicine into the field of individual prophylaxis and hygiene is considered.

The third day was dedicated to "Internal Medicine." The Parisian professor A. Lemierre discussed septic pyemia produced by Bacillus funduliformis. This micro-organism appears as an anaerobic saprophyte in the mouth, pharynx, intestine and genito-urinary canal. The bacillus is remarkable for its polymorphism and may produce sepsis. In several cases of

postanginal sepsis due to anaerobes observed at Paris, the causative agent was almost without exception Bacillus funduliformis. It attacks chiefly persons between the twentieth and thirtieth years.

Prof. Egas Moniz of Lisbon next discussed "Clinical Results from the Use of Cerebral Angiography," a subject studied by him since 1927. In addition to its use in the localization of tumors (aneurysms and angiomas) the cerebral angiograph supplies information about the velocity of circulation, especially if several pictures are taken in relatively rapid succession.

In his newly constructed clinic, Prof. L. Michaud of Lausanne discussed kidney disorders. He answered the question of a relation between azotemia and chloremia by saying that no direct correlations between the two exist. He arrived at this conclusion on the basis of 190 cases, in which 1,248 analyses were made.

The fourth day was devoted to "Pediatrics and Nutrition." Prof. Pierre Nobécourt of Paris discussed "Growth Insufficiencies." Prof. E. Feer of Zurich spoke on "Specific Vegetative Neuropathy in Infants (Childhood Acrodynia)," a disorder first described by him and called after him "Feer's disease."

"Cancer and Radiotherapy" was the topic on the fifth day. Prof. I. Holmgren of Stockholm informed the group that he had been able to effect modifications in cancers of the stomach by the use of tuberculin and BCG vaccine. Large dosages of tuberculin were remarkably well tolerated.

Prof. A. Rosselet of Lausanne stressed the importance of functional radiotherapy. Therapeutic results, modifications of the sympathetic nervous system, for example, may be achieved by means of the roentgen rays. Prof. Emil Bürgi of Berne spoke on "New Scientific Methods in Balneology."

The final day was devoted to contemporary problems. Prof. F. Verzar of Basel discussed "New Knowledge of Intestinal Resorption." The adrenals regulate phosphorization. Since resorption of dextrose and galactose as well as of fat is effected by phosphorization, Verzar decided to investigate whether or not adrenalectomy would inhibit the resorption of fat and of dextrose. Experiments showed that in adrenalectomized animals resorption of fat was retarded in the same degree and resorption of dextrose almost to the same degree as after poisoning from mono-iodo-acetic acid or from phlorhizin. After injection of adrenal cortex extract, normal resorption of both dextrose and fat was resumed in the adrenalectomized animals. Prof. C. Jiménez-Diaz of Madrid discussed metabolism in myopathic disorders. The Zurich psychiatrist Prof. Hans W. Maier spoke on "The Biology of Toxicomanias." He outlined the symptoms of various addictions and the treatment, and discussed the social and international aspects of the problem.

The regular attendance at the lectures was noteworthy. The audience was composed of specialists of all kinds in addition to a large number of general practitioners. Separate evening discussions were interpolated. The participants frequently would converse until midnight.

The first International Medical Week was a success. In compliance with the wishes of a large number of physicians, the second International Medical Week will be held next September at Lucerne.

The management of the arrangements contributed to the success of the gathering: the official hospitality, the sumptuous outing financed by Nestlé, and the hearty welcome accorded every one made it possible from the opening day for a friendly atmosphere to prevail.

The New Medical Clinic at Lausanne

Some time ago the New Medical Clinic was inaugurated at Lausanne with Prof. L. Michaud as director. Several new institutes and clinics have been established in recent years. The Faculty of Medicine of Lausanne has aided in the modernization of these institutions. Notable expenditures of money were made in many instances. Thanks to the sum contributed by the well known firm of Nestlé, this new clinic was made possible. Located on the outskirts of the city, the clinic has never been troubled for lack of space. Large, airy rooms which insure absolute quiet are provided for the patients. Laboratory activities are as far removed as possible from the patient's notice. This is especially important, as it prevents the patients from feeling that they are "objects" of experimentation. There are 120 beds for patients, distributed over the first and second stories; on the third floor there are eighteen beds for private patients. The walls of the sickrooms are yellow. The clinic has a lecture room seating a hundred persons and a smaller room seating forty.

BUDAPEST

(From Our Regular Correspondent)

March 8, 1936.

The Antivenereal Campaign

Prof. Dr. Edward Neuber, commissioner for the prevention of venereal diseases, stated recently that results may be obtained in the prevention of venereal diseases only if the work is done under uniform direction. The appointment of professors Lewis Nékám in 1917, Emerich Basch in 1929 and Edward Neuber in 1933 as ministerial commissioners are marks of progress in this field. Now the whole campaign against venereal diseases is centralized in the hands of these ministerial commissioners. The government reorganized the health administration in Hungary in 1924 and reformed the prevention of venereal diseases. At the meeting of the National Public Health Association in January 1925 an antivenereal committee was founded and was accepted by the ministry of social welfare and labor as a consultant body. The commissioner attaches great importance to the educational work and propaganda among the poor people and among youth. His principle is that public health laws succeed only when they meet with public understanding. It is absolutely necessary to provide medical consultation for every venereal patient and treatment for the poor. The antivenereal committee edited booklets and provided lantern slides on the symptoms of venereal diseases, on the necessity of treating them, and on their social importance. The commissioner was endeavoring to increase the number of dispensaries for venereal patients and to develop existing organizations in this field. These dispensaries are of great importance, and this importance will increase in the future, when the new law becomes effective. Twenty-five dispensaries are now at work in the country, besides a greater number of free outpatient departments; most of them work in cooperation with the National Social Insurance Institute, with the National Stephania Association and some of them with the National Public Health Institute. The obligatory prematrimonial medical examinations encounter difficulties in this country.

Special importance is attached to periodic medical examinations in different age groups. The medical examinations carried on at Debreczin among school children of the first elementary class aimed to discover the frequency of syphilis, gonorrhea, tuberculosis, trachoma and other infectious diseases. In five years, nearly 9,000 school children were examined; syphilis was found in from 4 to 5 per cent and pulmonary tuberculosis in from 20 to 25 per cent of the children. According to the new plans children with infectious diseases will be excluded from elementary schools. The periodic examinations will be made by the school physicians.

The antivenereal committee supported also the proposal, made by Professor Guszmann of Budapest University, for periodic blood analysis of pregnant women, and antisyphilitic treatment if necessary.

PREVENTION WORK

Dr. Aladár Emödi, senior physician to the Teleia Association for the Prevention of Venereal Diseases, did pioneer work. The first social organization was established in Hungary in 1893, and this was the first movement of this kind in the world. The city of Budapest recognized the work of this association (called "Teleia") and offered it a yearly subsidy. The Teleia, under the management of Dr. Emödi, surmounted many obstacles. The public at that time did not take the view that venereal patients were on an equality with other patients from the point of view of sickness benefit and drugs; but the law of 1907, proposed by Baron Szterényi, chairman of the association, guaranteed equal treatment for venereal patients.

Venereal disease showed a great increase during the war, which stimulated the Teleia to double its energy: dispensaries were established in several towns and effective propaganda was started. The films prepared by the association were attended by 150,000 adults; about 500,000 propaganda postcards and pamphlets were distributed. The monthly journal of the association has a circulation of 3,000 to 5,000 copies. The association reedited three booklets in popular style. Besides the Teleia, several similar associations were founded. The League Against Venereal Diseases and the Association for the Prevention of Venereal Diseases were short lived. Effective preventive work is done also by the National Social Insurance Institute and by other sickness insurance institutions, which, cooperating with other dispensaries, provide treatment for a great number of venereal patients. Remarkable work is done also by the Stephania Association, which provides dispensaries for the rural parts of the country. Propaganda is carried on also by the Museum of Social Hygiene, led by Dr. George Gortvay, in permanent exhibitions in Budapest and in the country, and by lectures on Sundays in the museum.

ITALY

(From Our Regular Correspondent)

Feb. 29, 1936.

Meetings of Medical Societies

The Accademia delle scienze mediche of Naples met recently under the chairmanship of Professor Jappelli. Dr. Becchini spoke on the relation between the emptying time of the stomach and the acidity of the gastric juice. The intensity of the acidity of the gastric contents can be determined by means of roentgen examination of the stomach. The emptying of the stomach after administration of 100 Gm. of barium sulfate and 100 Gm. of roasted meat is different in the same person when barium and meat are given simultaneously than when meat is given one hour after the administration of barium. The emptying time is less when barium and meat are given simultaneously than when there is an interval between their administration in persons with hyperacidity. The speaker advised the evaluation of the speed of emptying of the stomach, after administration of barium sulfate and meat without and with an interval, for determining gastric acidity in cases in which the stomach pump does not seem advisable.

Dr. Susanna reported experiments in which he produced degeneration of the kidneys and liver of dogs and rabbits by prolonged administration of camphor. The examination of urine and the determinations of glycemia failed to show the presence of renal and hepatic disturbances during the life of the animals, but the lesions were evident in microscopic studies of the organs. The pathologic alterations of the liver caused by the camphor were identical in dogs with and without biliary fistula. The speaker stated that his experiments support those who maintain that the administration of camphor is contraindicated in grave hepatic disturbances, diseases in which the oxygenation of the tissues is insufficient, diabetes and grave forms of septicemia. The experiments prove also that camphor, administered either in small doses given for a long time or in large doses given for a short time, causes degeneration of a previously normal liver.

The Società Piemontese di Chirurgia met recently under the chairmanship of Professor Bobbio. Dr. Pescarmona discussed Comelli's sign in fracture of the scapula. The sign consists in the appearance, immediately after trauma, of a triangular tumefaction, which includes the entire area of the traumatized scapula and lasts for seven or eight days. The sign appears when the zone of spongy bone of the scapula is involved in the fracture provided, however, the integrity of the subspinous fascia is well preserved.

Dr. Bobbio stated that the diffuse type of pelvic fibrosclerosis is of infectious origin, either genital or appendicular. The infection may be puerperal, gonococcic or tuberculous. Rectal disturbances predominate, frequently associated with vesical disorders and anorexia, weakness and cachexia. The differential diagnosis from malignant tumors is made by the chronic evolution of the disease and also by the clinical observations. The uterus is painful and fixed when it is felt by palpation and the rectum is deviated and stenosed. The prognosis is reserved. Medical treatment is indicated early in the development of the disease, but when changes in the rectum take place surgical treatment is indicated. Vaginal hysterectomy may be useful also in liberating the rectum. The speaker obtained satisfactory results from exploratory laparotomy followed by administration of medical treatment.

Drs. Colombo and Romero reported results of studies made for the determination of chronaxia in twenty-three patients suffering from amyotrophia following articular infection and trauma. The speakers found that in all cases the chronaxia of the atrophic muscle is increased when the causal lesion is in evolution. The values of the chronaxia of the nerve are constantly normal.

The Development of Hydrology

At a recent meeting of the Corporazione della ospitalità, the development of hydrology as a branch of medicine was discussed. Dr. Rebucci asked for the establishment of a chair for the teaching of medical hydrology and also for the compulsory organization of centers for controlling the effects of hydrologic treatment in all thermomineral stations. The speaker emphasized the importance of preparing scientific literature about Italian mineral springs, in order to make their properties known.

Dr. Vidau spoke on the importance of creating autonomous centers for the teaching of the subject. The speaker, having in mind that the establishment of a chair of hydrology meets economic difficulties at present, suggested the organization of courses the expenses of which could be covered by taxes collected, and also the organization of a high school of hydrology which would be supported by municipalities and other hydrologic centers.

Dr. Quitadamo advocated the modernization of mineral springs and the reduction of expense in order to give persons of modest means the opportunity of receiving treatment when indicated.

Congress of Dermatology and Syphilology

The Società italiana di dermatologia e sifilografia will hold its thirtieth reunion in October under the chairmanship of Professor Tommasi. The official topics will be occupational dermatoses and the evaluation of social problems in Italy due to syphilis and gonorrhea. The second official topic will be subdivided into evaluation of the problem from a dermographic point of view, evaluation of the problem from the point of view of production of work, economic burden of prevention, and treatment of syphilitic patients and syphilitic mothers.

Marriages

OTTO FLOYD ROGERS JR., Bloomington, Ind., to Miss Ruth Madelaine Wills of Connersville, March 28.

JAMES C. DOYLE, Los Angeles, to Miss Jacqueline White of Spokane, Wash., in Riverside, Calif., April 2.

WALTER L. THOMAS JR., Lynchburg, Va., to Miss Maisie Denhold of Durham, N. C., March 10.

NICHOLAS FLOYD ADAMS JR. to Miss Margaret Bardelle Roberts, both of Baltimore, April 24.

NORMAN R. INGRAHAM JR. to Miss Louise Brown, both of Philadelphia, April 18.

Deaths

Carl Fredric Moll ⊕ Flint, Mich.; Saginaw (Mich.) Valley Medical College, 1899; member of the House of Delegates of the American Medical Association from 1926 to 1935; past president of the Michigan State Medical Society and the Marquette County Medical Society; an associate of the American College of Physicians; physician to the Michigan School for the Deaf; on the staffs of the Hurley Hospital, St. Joseph's Hospital and the Women's Hospital; aged 64; died suddenly in Detroit, May 1, of acute myocarditis while in a taxicab.

Herbert L. Northrop, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1889; member of the Medical Society of the State of Pennsylvania; professor of surgery, and formerly dean, at his alma mater; fellow of the American College of Surgeons; surgeon to the Hahnemann Hospital and Dispensary; member of the consulting staffs of the Broad Street Hospital and of the Women's Homeopathic Hospital; aged 70; died, May 3, at his home in Melrose Park, of bronchopneumonia.

Henry Denny Thomason ⊕ Colonel, U. S. Army, retired, New York; University of Pennsylvania Department of Medicine, Philadelphia, 1882; entered the army as an assistant surgeon in 1903; veteran of the Spanish-American and World wars; was retired with rank of colonel in 1930 for disability in line of duty; formerly superintendent of the New York Homeopathic Medical College and Flower Hospital; aged 77; died, February 27, of coronary thrombosis.

William Tweedy Getman ⊕ Buffalo; University of Buffalo School of Medicine, 1901; assistant professor of obstetrics at his alma mater; fellow of the American College of Surgeons; veteran of the Spanish-American War; attending obstetrician to the Buffalo General Hospital, Buffalo City Hospital, Millard Fillmore Hospital and the LaFayette General Hospital; aged 59; died, February 20, of coronary occlusion and arteriosclerosis.

Charles Crawford Hinton ⊕ Macon, Ga.; Johns Hopkins University School of Medicine, Baltimore, 1913; past president of the Bibb County Medical Society; fellow of the American College of Physicians; served during the World War; laboratory consultant to the U. S. Veterans Administration and internist to the Middle Georgia Sanatorium; aged 47; died, February 25, of angina pectoris.

H. Hershey Farnsler ⊕ Harrisburg, Pa.; Medico-Chirurgical College of Philadelphia, 1904; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; aged 57; consulting surgeon, department of ophthalmology and otolaryngology, Harrisburg Hospital, where he died, March 14, of acute nephritis.

Christopher M. Reyher, Gary, Ind.; Northwestern University Medical School, Chicago, 1906; member of the Indiana State Medical Association; fellow of the American College of Physicians; formerly city health officer and president of the board of health; aged 55; was killed, February 12, when the automobile which he was driving was struck by a train.

Albert Lee Coffield, New Martinsville, W. Va.; Eclectic Medical College, Cincinnati, 1911; member of the West Virginia State Medical Association; past president of the Tyler-Wetzel County Medical Society; formerly county health officer; on the staff of the Wetzel County Hospital; aged 50; died suddenly, February 26, of cardiorenal disease.

Thomas Rollins Marshall ⊕ Major, U. S. Army, retired, Wan, Va.; College of Physicians and Surgeons, Baltimore, 1893; veteran of the Spanish-American and World wars; entered the medical corps of the army as a major in 1920 and retired in 1930 for disability in line of duty; aged 64; died, February 22, of coronary occlusion.

Charles Franklin Watkins ⊕ Billings, Mont.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1901; fellow of the American College of Surgeons; formerly city and county health officer and member of the city council; surgeon to St. Vincent's Hospital; aged 63; died, March 4, of bronchopneumonia.

Tracy Earl Clark, Brooklyn; Long Island College Hospital, Brooklyn, 1900; formerly instructor of chemistry at his alma mater, professor of physiology and toxicology and assistant professor of materia medica, botany and pharmacognosy, Brooklyn College of Pharmacy; aged 69; died, March 5, of carcinoma of the prostate.

Joseph Ellmore Wier ⊕ Evansville, Ind.; Indiana University School of Medicine, Indianapolis, 1913; served during the World War; member of the Associated Anesthetists of the United States and Canada; aged 52; on the staff of the Welborn-Walker Hospital, where he died, March 16, of liver abscess and septicemia.

Harry G. Grable ⊕ Kokomo, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; past president of the Howard County Medical Society; on the staff of the Good Samaritan Hospital; aged 53; died, February 23, of coronary thrombosis, arteriosclerosis and gastric ulcer.

Conrad Rowland Hoffman ⊕ Glens Falls, N. Y.; Albany (N. Y.) Medical College, 1903; past president and secretary of the Warren County Medical Society; fellow of the American College of Surgeons; aged 55; on the staff of the Glens Falls Hospital, where he died, February 9, of carcinoma of the colon.

George Daniel Balsbaugh ⊕ North Manchester, Ind.; Kentucky University Medical Department, Louisville, 1904; president of the Eleventh District Medical Society; past president of the Wabash County Medical Society; aged 56; died, February 21, of coronary thrombosis and myocarditis.

Carl A. Bartholomew ⊕ Martin, Mich.; Detroit College of Medicine, 1903; past president of the Kalamazoo Academy of Medicine; for many years county coroner; aged 59; on the staffs of the Borgess Hospital and the Bronson Hospital, Kalamazoo, where he died, February 15, of angina pectoris.

Silas Rogers Corwith, Bellport, N. Y.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1883; past president of the Suffolk County Medical Society; health officer of Bellport; aged 77; died, February 26, of cerebral arteriosclerosis.

Theodore Frank Foster, Pensacola, Fla.; University of Cincinnati College of Medicine, 1921; at one time health officer of West Hartford, Conn.; formerly epidemiologist of the bureau of health of Knoxville, Tenn.; aged 37; died, February 10, of bilateral polycystic kidney and uremia.

Percy Augustus Perkins ⊕ Memphis, Tenn.; University of Virginia Department of Medicine, Charlottesville, 1908; fellow of the American College of Surgeons; served during the World War; on the staff of the Methodist Hospital; aged 52; died, February 20, of lobar pneumonia.

William G. Winter ⊕ Holland, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1906; fellow of the American College of Surgeons; for many years on the staff of the Holland City Hospital; aged 52; died, February 9, of lobar pneumonia.

Leland Vain Grady, Wilson, N. C.; North Carolina Medical College, Charlotte, 1913; member of the Medical Society of the State of North Carolina; medical superintendent of the Carolina General Hospital; aged 47; died, February 21, in Bladenboro, of pneumonia.

Joseph Nicholas Bennett Garlick ⊕ Schenectady, N. Y.; Albany Medical College, 1904; president of the Schenectady County Medical Society; health commissioner of Schenectady; aged 53; died, February 17, in the Umatilla (Fla.) Hospital, of heart disease.

Clifford Eugene Alexander, Duluth, Minn.; University of Minnesota Medical School, Minneapolis, 1925; member of the Minnesota State Medical Association; on the staffs of St. Luke's and St. Mary's hospitals; aged 34; died in February of injuries received in a fall.

John Morgan Smith, Berkeley, Calif.; University of Nashville (Tenn.) Medical Department and Vanderbilt University School of Medicine, Nashville, 1893; aged 70; died, February 8, in the Humboldt Hospital, Albany, of coronary sclerosis and myocarditis.

Charles H. C. Mills, Charlotte, N. C.; University of Maryland School of Medicine, Baltimore, 1899; at one time professor of obstetrics and clinical gynecology, North Carolina Medical College; aged 68; died, March 5, of arteriosclerosis and heart disease.

William Bernard Funk, Chicago; Dearborn Medical College, Chicago, 1907; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; aged 56; died, February 4, of chronic myocarditis and nephritis.

John E. Cunningham, Fowlerville, Mich.; Detroit College of Medicine, 1894; member of the Michigan State Medical Society; aged 74; died, February 12, in St. Lawrence Hospital, Lansing, as the result of fracture of the hip received in a fall.

Cornelius Francis Cooley, Schenectady, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1934; aged 24; assistant resident to the Ellis Hospital, where he died, February 3, of appendicitis and peritonitis.

Hugh Alexander McKay, New Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1914; member of the American Psychiatric Association; superintendent of the Ontario Hospital; aged 51; died, February 14.

Samuel Arnold Dorfmann, New York; Baltimore University School of Medicine, 1898; aged 64; died, March 12, in the New York Post-Graduate Medical School and Hospital, of acute cholecystitis and bronchopneumonia.

Robert Brodie Glasgow, Burlington, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1878; aged 81; died, February 25, in the Odd Fellows Home, Trenton, of chronic myocarditis and arteriosclerosis.

Clarence Wallace Flint, Chicago; Chicago College of Medicine and Surgery, 1917; served during the World War; aged 46; died, March 10, in the Veterans Administration Facility, Hines, Ill., of pneumonia.

Melvin Ellwood Beachy, Grantsville, Md.; University of Pennsylvania School of Medicine, Philadelphia, 1935; aged 31; died, January 29, in the National Stomach Hospital, Philadelphia, of sarcoma of the ileum.

John Seymour Emans ✠ Gabriels, N. Y.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1892; aged 71; died, March 11, of cerebral hemorrhage and arteriosclerosis.

Clarence Linden Lewis Jr., Richmond, Va.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1888; aged 71; died, January 28, in Biloxi, Miss., of angina pectoris.

Charles Harvey Archibald, New York; Jefferson Medical College of Philadelphia, 1890; aged 71; died, February 28, in Asbury Park, N. J., of carcinoma due to x-ray burns of the left arm and chest wall.

Marquis E. Daniel, Honey Grove, Texas; Eclectic Medical Institute, Cincinnati, 1888; member of the state board of medical examiners; formerly mayor; aged 69; died, March 9, of coronary embolism.

George Henry Bickley, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1894; clinical professor of gastro-enterology at his alma mater; aged 63; died, March 19, of heart disease.

Robert Lawrence Piper, Tyrone, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1892; for many years member of the board of education; aged 70; died, February 15, of uremia.

Horace Emlen Westhaeffer, Sunbury, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1875; aged 85; died, February 25, in the Mary M. Packer Hospital, of pneumonia.

Mary E. Lapham, Highlands, N. C.; Woman's Medical College of Pennsylvania, Philadelphia, 1900; served during the World War; aged 75; died recently, in St. Augustine, Fla., of heart disease.

Frank Sumner Lowell, Cambria, Calif.; Cooper Medical College, San Francisco, 1892; aged 71; died, February 11, in San Luis Obispo, of chronic pyelonephritis, cerebral thrombosis and uremia.

Augustus Lucius Chase, Randolph, Mass.; Eclectic Medical Institute, Cincinnati, 1872; formerly member of the Board of Registration in Medicine; aged 86; died, February 28, of chronic cystitis.

Augustus Wellington Chandler ✠ Rockford, Ill.; Rush Medical College, Chicago, 1887; fellow of the American College of Surgeons; aged 75; died, March 24, of paralysis agitans.

Oscar H. Kniffler, New York; Rheinische Friedrich-Wilhelms-Universität Medizinische Fakultät, Bonn, Prussia, 1889; aged 72; died, January 27, of aneurysm of the aorta.

Albert Anderson Long, Kansas City, Mo.; Ensworth Medical College, St. Joseph, 1913; veteran of the Spanish-American War; aged 65; died, January 19, of sarcoma of the femur.

Joseph Clifton ✠ Memphis, Tenn.; University of Nashville Medical Department, 1906; on the staff of the Methodist Hospital; aged 62; died, January 26, of heart disease.

Edward Lyman Kingman ✠ Newtown, Conn.; Yale University School of Medicine, New Haven, 1894; aged 64; died, January 1, of peritonitis and cerebral embolus.

Hardin Davenport Irvan, Gladewater, Texas; Jefferson Medical College of Philadelphia, 1909; aged 52; died March 9, of injuries received in an automobile accident.

Fred William McKibbon, Oakdale, Calif.; University of Vermont College of Medicine, Burlington, 1900; aged 61; died, February 17, of cerebral arteriosclerosis.

Crittenden E. Keller, San Antonio, Texas; Texas Medical College and Hospital, Galveston, 1881; aged 87; died, March 2, of arteriosclerosis and senile dementia.

Horace W. Durnall, West Chester, Pa.; Columbian University Medical Department, Washington, D. C., 1878; aged 86; died, February 29, of chronic nephritis.

George John Seufert, Franklin Square, N. Y.; University and Bellevue Hospital Medical College, New York, 1899; died, January 24, of pulmonary tuberculosis.

Fred Kittredge Lenfestey, Mount Clemens, Mich.; Western University Faculty of Medicine, London, Ont., 1903; aged 58; died, January 25, in Tampa, Fla.

Cuthbert Lynn Hosmer, Houston, Texas; Maryland Medical College, Baltimore, 1907; aged 59; died, February 19, of uremia, arteriosclerosis and nephritis.

Albert W. Phelps ✠ East Aurora, N. Y.; University of Buffalo School of Medicine, 1898; aged 64; died, January 26, of myocarditis and arteriosclerosis.

James Monroe Crowley, Portland, Ore.; Missouri Medical College, St. Louis, 1891; aged 76; died, February 11, of arteriosclerosis and angina pectoris.

Samuel Addison Taylor, Montpelier, Ky.; Kentucky School of Medicine, Louisville, 1890; aged 78; died, in February, of cerebral hemorrhage.

Frank M. Kindig, Chicago; Northwestern University Medical School, Chicago, 1894; aged 62; died, January 31, in the Wesley Memorial Hospital.

James Madison Muse, Conway, Ark.; University of Arkansas School of Medicine, Little Rock, 1914; aged 68; died, February 25, of pneumonia.

Francis Edward O'Brien, Auburn, N. Y.; Bellevue Hospital Medical College, New York, 1894; aged 65; died, January 31, of cerebral hemorrhage.

Leander O. Jones, Hebbardsville, Ky.; University of Louisville Medical Department, 1880; aged 84; died, February 18, of cerebral hemorrhage.

Joseph H. De Bra, Dayton, Ohio (licensed in Ohio under the Act of 1896); Civil War veteran; aged 94; died, February 20, of myocarditis.

Ruth B. Carroll, Columbia, S. C.; Meharry Medical College, Nashville, Tenn., 1908; aged 46; died, January 28, of cerebral hemorrhage.

Joseph Aloysius Lamb, Le Mars, Iowa; University Medical College of Kansas City, 1904; aged 61; died, February 4, of chronic nephritis.

Grant Wallace Pendleton, Idaho Falls, Idaho; Denver College of Medicine, 1888; aged 71; died, January 30, of cerebral hemorrhage.

Thomas R. Cravens, Chicago; Harvey Medical College, Chicago, 1897; aged 71; died, March 23, in St. Louis, of chronic myocarditis.

William L. Hill, Roswell, N. M.; Hahnemann Medical College and Hospital of Philadelphia, 1892; aged 77; died, in January.

Samuel Luther Perkins, Wilkesboro, N. C.; Baltimore Medical College, 1891; aged 76; died, January 29, of heart disease.

William H. Manes, Tulsa, Okla.; University of Louisville (Ky.) Medical Department, 1891; aged 70; died in February.

Lewis Samuel Eastlake, Los Angeles; Detroit College of Medicine, 1892; aged 72; died, February 6.

Correspondence

ADDISON'S DISEASE FOLLOWING ADRENAL DENERVATION

To the Editor:—In THE JOURNAL, January 25, page 279, Dr. J. M. Rogoff reported "Addison's Disease Following Adrenal Denervation in a Case of Diabetes Mellitus." While the diagnosis of Addison's disease was probably correct, it should be pointed out that necropsy was not permitted, and Dr. Rogoff's statement that "the surgical manipulations apparently resulted in occlusion of blood vessels and degeneration of the adrenal cortex" is pure speculation. Physiologists usually criticize post hoc propter hoc reasoning.

The editorial (p. 294), apparently based on Rogoff's one unverified case, proceeds to attack irradiation of the pituitary and adrenal areas as a treatment of hypertension and suggests by inference that this is irradiation of the kidneys, which "is one effective way of producing hypertension." This statement is apparently predicated on the work of Page (*Am. J. Physiol.* **112**:166 [May] 1935). The writer appeared to be unfamiliar with Page's work or with irradiation used in the treatment of hypertension or with the significance of the different dosages used. Page transplanted the kidneys to an abnormal position just under the skin. From five to seven erythema doses of irradiation was then applied to each kidney. We use 120 kilovolts, 3 milliamperes, 50 cm. skin target distance, 2 mm. of aluminum filter, five minutes. On our machine this delivers 50 roentgens, about one ninth of one erythema dose, and only slightly more than half as large as that used by dermatologists.

It has been demonstrated that doses of x-rays large enough to damage the adrenals are not followed by any reduction in blood pressure or relief of symptoms of which hypertensive patients complain (*New England J. Med.* **211**:952 [Nov. 22] 1934). It has been proved experimentally, that with removal of one adrenal followed by the direct application of x-rays to the one remaining adrenal, it is necessary to use from ten to fourteen erythema doses before there is any sign of functional damage to the adrenal (*Am. J. Physiol.* **93**:219 [May] 1930).

Finally, there is now a series of something over 500 cases that have been treated by the method of irradiation that we use. Approximately three out of four patients report symptomatic relief and a material reduction in blood pressure. This has been true not only in our series but also in the hands of other workers who employ the same technic that we use. So far not the slightest damage has been reported to the skin, the hair, the pituitary, the adrenals or the kidneys. A number of patients have been under observation for more than three years, which seems sufficient time for symptoms of pituitary or adrenal damage to manifest themselves. One case has come to autopsy. The woman had had much larger doses than are ordinarily employed. They were without material effect on her blood pressure. Adenomas were found in the cortex of both adrenals. There was no evidence of x-ray damage to the pituitary or adrenals. No one can disagree with the editorial writer that the hazards of treatment should be less than the hazards of disease. That principle was adopted before the irradiation method of treatment for hypertension was ever employed; it has been consistently followed at all times.

JAMES H. HUTTON, M.D.; E. E. MADDEN, M.D.
M. J. HUBENY, M.D. Chicago.

[NOTE.—The letter of Drs. Hutton, Madden and Hubeny was referred to Dr. Rogoff, who replies:]

To the Editor:—The comments by Drs. Hutton, Madden and Hubeny on my paper of January 25 and on the editorial in the same issue of THE JOURNAL impress me as an unconvincing clinical argument in favor of a risky empirical practice. The interpretations of the literature indicate an inadequate comprehension of the physiologic premises. Page (*Am. J. Physiol.* **112**:166 [May] 1935) obviously displaced the kidney to a superficial position because he desired to irradiate only the kidney and to avoid exposure of other organs to irradiation. Irradiation of the "adrenal region" would include the kidney, which, as Page showed, can produce hypertension. Baird, Lingley and Palmer (*New England J. Med.* **211**:952 [Nov. 22] 1934) did not claim that they damaged or attempted to damage the adrenals. Pertinent interpretation of their paper should be made from their own statements that "hypertensive patients are very suggestible, that there are marked spontaneous variations both in blood pressure and in the symptoms of patients with essential hypertension." Their conclusion reads: "Eight patients with essential hypertension in the late stages of the disease have been treated by roentgen radiation over pituitary or adrenals or both. In the dosage used, no strikingly favorable effect on blood pressure or symptoms has been noted." Rogers and Martin (*Am. J. Physiol.* **93**:219 [May] 1930) irradiated the remaining adrenal, under anesthesia, in unilaterally adrenalectomized dogs. They observed that adrenal insufficiency may develop, even with smaller doses, appearing some time after irradiation. They also review literature of reliable experimental work by competent investigators on the great susceptibility to injury by roentgen irradiation of the mucosa of the alimentary tract, the kidneys, the pancreas and other organs.

In view of the present inadequate knowledge concerning possible delayed (or immediate) injury to important structures, roentgen radiation in any effective dose cannot be considered an indifferent procedure! Incidentally, since experimental evidences are being considered, I may call attention to the paper by La Barre (*Sang* **7**:487, 1933), who contends that small doses cause an increase in epinephrine secretion from the adrenals. If so, this would certainly be anything but desirable or helpful in a patient with hypertension.

The reference by Drs. Hutton, Madden and Hubeny to the diagnosis of Addison's disease, in my paper, as "probably correct" and to my interpretation of the adrenal cortical damage as "pure speculation," because an autopsy was not permitted, is interesting. Their implication that "not the slightest damage . . . to the adrenals, pituitary or the kidneys" occurred following roentgen irradiation is apparently not considered "pure speculation." Shall it be assumed that this is based on autopsy in each of the 500 cases mentioned and not on "post hoc propter hoc reasoning?" It would be a valuable contribution if they could suggest a more tenable explanation than mine for the cause of Addison's disease in the case under discussion. I suggest a more careful perusal of my paper and of the article (reference 2) cited by me. That may aid in a better understanding of the production of adrenal cortical insufficiency through traumatic and circulatory factors which lead to irreparable degeneration and also of the relation of such factors to serious or fatal adrenal insufficiency (e. g., Addison's disease).

The alleged subjective improvement, offered as the final and only proof of the value of roentgen irradiation of the pituitary and adrenal regions in hypertension, is no more convincing than patients' testimonials in the case of certain cancer cures, faith cures or cures of rheumatism by toe twisting. The report on Addison's disease following adrenal denervation in a case of diabetes mellitus was published by me, primarily, as a warning against possible serious consequences of interfering with an indispensable organ, especially when such a procedure is based on hypothetical concepts. Obviously, the author of the editorial in THE JOURNAL was guided by the same motive. It seems evident that my report and the editorial recommendations of "caution" are timely, as expressed in the numerous personal communications received by me from readers of THE JOURNAL.

J. M. ROGOFF, M.D., Chicago.

THE DUCTLESS GLANDS—A DISCLAIMER

To the Editor:—In the April issue of the magazine *Esquire* appeared an article by George Antheil on the ductless glands in which my name was mentioned. Mr. Antheil is a former patient who became much interested in endocrinology. He read everything he could on the subject and made himself acquainted with some of the concepts of the field. Early this year he told me that he was contemplating writing an article on the ductless glands for *Esquire*. I told him that he would display the audacity of ignorance in writing such an article for any magazine, and that I was sure that it was bound to be full of inaccuracies and absurdities. He then asked me whether he might use my name, either my first or my last, if he decided to write such an article on his own responsibility, and I definitely refused permission. I was under the impression that our single conversation on the subject had put a stop to the writing of the article and I was astonished to hear that it had been written and published. On reading it I found it to be replete with preposterous inaccuracies and misstatements, not only scientific, but also personal. I wish to emphasize the following:

1. I did not see this article when it was written or before it was published.

2. I strongly opposed the writing of such an article.

3. There is not a single social occasion referred to, involving either men of genius, pugilists or dancers, that is correctly depicted, and the whole can be referred to politely only as "fictionized autobiography."

LOUIS BERMAN, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

TUBERCULOSIS IN PREGNANCY

To the Editor:—Please discuss the proper management of a pregnancy and labor of a tuberculous tertipara in the sixth month of pregnancy. She first knew of her condition three years ago. At present she has no cough, fever or sputum; she has a good appetite and is gaining from 4 to 6 pounds per month. Roentgen examination shows an exudative productive lesion of a large area of the right upper lobe. On auscultation there are fine crepitant râles in the infraclavicular region. Is it absolutely necessary to deliver with forceps? How long should she remain in bed during the puerperium? Is nursing contraindicated? Should BCG vaccine be used in the infant? Please omit name.

M.D., New York.

ANSWER.—Phthisiologists generally believe that the course of pregnancy and labor is only slightly effected by pulmonary tuberculosis. It is imperative, however, that a patient with pulmonary tuberculosis be under the care of both an obstetrician and a phthisiologist. Furthermore, the care on the part of the latter should continue for at least six months after delivery. Since this patient has no fever or cough or loss of weight, the prognosis is good, but in spite of this she must be carefully watched. When she goes into labor, special efforts should be made to conserve her strength, to diminish pain as much as possible and to eliminate if possible the second stage without harm to mother or baby. Hence as soon as pains are regular and strong, analgesia should be administered in the form of morphine, sodium amytal or similar drugs. As soon as the cervix is completely dilated and effaced, the baby should be delivered with forceps, provided the head is engaged. In primiparas an episiotomy should be made. When the delivery can be accomplished by an easy low forceps delivery, direct infiltration anesthesia with 0.5 per cent procaine hydrochloride should be used. Otherwise ethylene-oxygen or nitrous oxide-oxygen should be used for the forceps delivery. All bearing-down efforts must be avoided, in multiparas as well as in primiparas. Special hygienic care is important immediately after labor. Women with pulmonary tuberculosis should not nurse their babies; hence the breasts should be bound up snugly and fluids restricted for a few days. Nursing is prohibited both because it is a severe strain on the mother and also because it may be a means of infecting the new-born child. The length of time a patient should remain in bed after delivery depends on her general physical condition. If there is no elevation of temperature, two weeks may be sufficient; but if fever is present the patient may have to remain in bed for many weeks and months. There is no need to use BCG vaccine in the infant.

An excellent exposition of this subject may be found in "Gynecological and Obstetrical Tuberculosis," by E. M. Jameson, Philadelphia, Lea & Febiger, 1935.

PREVENTION AND TREATMENT OF BRUCELLA ABORTUS INFECTION

To the Editor:—Owing to the fact that several herds of cattle in this community are infected with Brucella abortus, I am deeply interested in learning all that I can about this disease in stock as well as its effects on the human patient. 1. Will pasteurizing infected milk at 140 F. for thirty minutes render such milk safe for human consumption? 2. What is known concerning the length of time these organisms can live in infected pastures where they are exposed to the sunlight and heat of summer and the freezing temperatures of winter? 3. A rather prominent dairy man in one of our larger centers is credited with the statement that butter made from infected milk quickly loses its infectivity because of its salt content. Is there any truth in this statement? 4. Am I correct in saying that, when an infected bull is removed from a herd, the infected cows will immunize themselves? 5. Also that an infected cow that has been given vaccine treatment over an adequate period also apparently returns to normal so far as giving birth to normal term calves? But the point in question here is whether these animals act similar to a human typhoid carrier and continue to throw off the infecting organisms causing undulant fever or whether the germs are entirely eradicated from the excreta. 6. Is the disease transmitted from the mother to the calf in cases of treated cows or in those that have apparently immunized themselves? 7. Could the consumption of infected milk by a pregnant woman cause abortion? 8. Are there any known methods of ridding an infected pasture of this contagion? 9. What is known relative to birds, rabbits and other animals transferring the disease from one locality to another? 10. Relative to therapy for human beings, I have recently learned of a new tretment consisting of giving the undulant fever vaccine to a non-infected donor and then using the donor's blood or serum to treat the infected patient. I would appreciate a description of this method and your opinion as to its value as compared with the direct method of treating the infected patient with the undulant fever vaccine. Kindly omit name.

M.D., Missouri.

ANSWER.—1. Pasteurization of milk at 140 F. for thirty minutes will destroy Brucella organisms.

2. C. P. Fitch (Report of Experimental Work in the Control of Bovine Infectious Abortion, *J. Am. Vet. M. A.* **75**:215 [Aug.] 1929) of the University of Minnesota states that Brucella organisms are not long lived outside the animal body; he believes that physical contact, especially "licking," is the principal way by which this infection is conveyed from animal to animal in the barn and paddock. In the pasture the aborted fetus and resultant contaminated food also become important factors in the spread of the disease.

3. C. M. Carpenter and Ruth Boak (Brucella Abortus in Milk and Dairy Products, *Am. J. Pub. Health* **18**:743 [June] 1928) inoculated butter, prepared from pasteurized cream, with Brucella abortus; the salt content of the butter was 1.5 per cent. The organisms were still viable after 142 days of refrigeration at 46.4 F. (8 C.). C. P. Fitch and Lucille M. Bishop (Presence of Bacterium Abortus Bang in Raw Milk, Butter and Ice Cream, *Proc. Soc. Exper. Biol. & Med.* **30**:1205 [June] 1933) prepared butter with cream collected by gravity separation from the milk of cattle known to be shedding Brucella abortus. One half of the butter was salted (3 per cent) and one half was not salted. Brucella abortus was isolated from the salted and unsalted butter and from the buttermilk. These observers also recovered Brucella abortus from ice cream prepared from cream known to be naturally infected.

4. No.

5. The use of vaccines containing living Brucella organisms has been largely abandoned because of the danger of infecting cattle with the living organisms. Many cows continue to eliminate Brucella organisms in the milk for many months after all clinical evidence of the disease has disappeared.

6. If segregated from infected herds soon after birth, more than 90 per cent of the calves born from infected dams will become negative to the blood tests at from 3 to 6 months of age. This apparent immunity of calves to Brucella infection provides an opportunity to build up clean herds from the calves of infected animals.

7. Yes.

8. No accurate information is available.

9. No accurate information is available.

10. It is conceivable that the production of passive immunity by repeated injections of Brucella melitensis (abortus) vaccine in a noninfected donor might supply sufficient immune bodies to produce a favorable influence on the course of the disease following the transfusion of such blood to a patient with brucellosis. Vaccine therapy of patients with active brucellosis appears to produce a favorable influence in the majority of cases.

TREATMENT OF OILY SKIN

To the Editor:—Is there any special diet that influences excessive oiliness of the skin and scalp? Any suggestion as to local application will also be appreciated. Please omit name and address.

M.D., Texas.

ANSWER.—There is no doubt that the restriction of fats and carbohydrates will lessen in some degree the production of sebum; but it is never sufficient alone to correct oversecretion. The patient must be examined thoroughly and any underlying disorder, such as anemia, constipation or focal infection, corrected.

Washing the face with hot water and soap, applying hot towels for ten minutes or more, then cold water and a brisk rub, has a good effect. It should be done at least once daily, better both morning and evening. This with the use of a face powder containing 1 or 2 per cent sulfur or 3 per cent salicylic acid may be sufficient. If not, lotio alba (sulfurated potash and zinc sulfate, of each 2 Gm. in 60 cc. of rose water) may be applied at night after the washing and hot packs. This is to be shaken, dabbed on and allowed to dry. In the morning the face is washed as usual with soap and water. When the face becomes dry and scaly, whether generally or, as often happens, about the angles of the mouth, treatment must be suspended on the scaly area. If sulfur is not well borne, salicylic acid, from 1 to 3 per cent, may be used in alcohol.

Ultraviolet exposures daily or every other day, or sun baths, have a decided drying effect. The risk of increased freckling or tanning must be taken. It is temporary. The same may be said of roentgen treatment, which in divided doses of from 37.5 to 75 roentgens each week is the most powerful of all methods and gives the most lasting effect. It should not be carried further than a total of three erythema doses (900 roentgens) for fear of late untoward effects.

For the oily scalp, lotio alba, which here may be used in double strength, 4 Gm. of each of the ingredients in 60 cc. of rose water, may give prompt amelioration. It should be well shaken, put on the scalp with a medicine dropper, and rubbed in with the fingers. The salicylic acid alcohol may be used in the scalp with good effect, the strength increased to 5 or 10 per cent. Ether, 10 or 20 per cent, may be added to dissolve the grease, which can be removed to some extent by rubbing the scalp with a paper towel. Frequent shampooing once or twice a week is called for. In spite of the fact that brushing and massage bring out sebum from the follicles, they should not be neglected, for their aid in increasing circulation is invaluable. Especially is this true in cases in which the hair is falling too rapidly. Sunlight exerts a beneficial effect, as does ultraviolet radiation. Going without a hat in a sunny climate or daily exposures to ultraviolet rays will be beneficial.

PHLEBITIS

To the Editor:—I have a case of severe phlebitis in the right leg which I have treated by rest, slight elevation of the leg and heat from an electric bulb. Could you please tell me if there is any other treatment that I could use, ambulatory or otherwise? Please omit name.

M.D., Rock Island, Ill.

ANSWER.—The treatment of thrombophlebitis in the acute stage is absolute rest in bed, elevation of the involved extremity, and the application of heat, either by radiation or by moist, hot packs. When the systemic temperature is no longer elevated and when edema and tenderness over the vein have disappeared, the patient may be allowed out of bed. This period of active treatment is a variable one but rarely exceeds three weeks and is usually only a week or ten days. There is no value and perhaps considerable harm in keeping the patient in bed for a long period after he has phlebitis. From the clinical standpoint, possibilities of detachment of the thrombus with subsequent pulmonary infarction or embolism are no greater almost immediately after the temperature is normal and edema and tenderness have disappeared than after a much prolonged period of rest in bed. After the condition is satisfactory enough to allow the patient to be up, the sole problem of treatment is one of adequate support to prevent edema. The cloth bandages ordinarily used for this purpose are usually insufficient. Most satisfactory is a pure rubber bandage of moderate weight, which is 3 inches wide by 15 feet long. This should be applied over a lisle stocking beginning with two turns about the foot, making a figure eight about the ankle, and progressing up the leg to just below the knee. Such a bandage should be applied tightly enough to prevent edema and loosely enough so that it does not interfere with circulation, the symptoms of which are numbness, tingling, coldness, and excessive cyanosis of the toes. The bandage should be removed at midday and it is advisable, ordinarily, for the patient to lie down for a while. It is then reapplied over a dry stocking, and this procedure is repeated in the evening if the patient is active at this time. If he is inactive, he may lie or sit with the leg elevated.

Approximately one day of every month is used as a test period. The patient goes about normal activity without the use of the bandage. If edema occurs, it is necessary for him to resume the use of the bandage for another month. The bandage should never be discarded permanently until edema does not occur after ordinary activity. The period over which it is necessary to wear a bandage varies from two or three months to an indefinite number of years. If edema in the extremity is prevented by adequate bandaging, there will not be any subsequent complications, such as varicose veins, ulcers, stasis dermatitis, and lymphangitis.

INCUBATION PERIOD IN MENINGITIS

To the Editor:—How long from the commencement of the attack of epidemic cerebrospinal meningitis may the disease be contracted from the patient? What is the relative standing of the meningococcus serum and the more recently introduced antitoxin in the treatment?

THOMAS J. TUDOR, M.D., Norton, Va.

ANSWER.—It has been estimated that the average time for meningococci to remain in the nasopharynx is about two weeks. It is probably on this basis that some states have established a minimum quarantine period of fourteen days for patients with epidemic meningitis. Meningococcus carriers are also often found to be free from the organisms within approximately two weeks. However, persistent carriers are occasionally found who continue to harbor the organisms for a period of months.

Excellent results in the treatment of meningococcic meningitis may be secured with the use of either antimeningococcus serum or meningococcus antitoxin, provided the remedy chosen is given intravenously in sufficiently large doses.

Some reports have suggested that fewer complications occur among antitoxin-treated cases than among patients who are treated with one of the standard serums.

HISTAMINE IN BLOOD

To the Editor:—Kindly suggest a good chemical method for the quantitative determination of histamine in blood. Please omit name and address.

Ph.D., South Carolina.

ANSWER.—There is no good chemical method for the quantitative determination of histamine in blood. The presence of histamine is determined by the Pauly diazo reaction. A relatively simple procedure is described by MacGregor and Thorpe in the *Biochemical Journal* **27**:1394 (No. 5) 1934. In this test 1 cc. of the solution to be tested is mixed with 1 cc. of 0.5 normal sodium carbonate, and 2 cc. of a fresh diazo reagent is added. The latter is prepared by mixing equal volumes of 0.125 per cent *p* nitraniline in 0.1 normal hydrochloric acid and 0.37 per cent sodium nitrite. A reddish yellow color forms, which reaches its maximum intensity in one minute. This color can be compared with permanent standards in a colorimeter if a quantitative estimation is desired. The method will determine as little as 0.01 mg. of histamine. Other substances, such as histidine and tyrosine, also give the test. Proteins and ammonium salts interfere. The removal of these substances is time consuming and requires considerable skill to avoid loss of histamine.

Histamine may also be isolated by electrodialysis (MacGregor and Thorpe) and determined by physiologic assay. The fall in blood pressure of an etherized cat is compared with the drop produced by a known quantity of histamine.

TOXICITY OF CARBON TETRACHLORIDE

To the Editor:—What information do you have on the toxicity of carbon tetrachloride when used to remove adhesive tape from the skin? When used in this manner is this material toxic, excluding the local irritating effect? Please omit name.

M.D.

ANSWER.—Chemically pure carbon tetrachloride is much less toxic than the impure drug but still four times as toxic as chloroform. Severe intoxications have occurred after its use as a dry shampoo, for extinguishing fires and for dry cleaning. It is suspected that the toxic effect of some shoe dyes has been due to carbon tetrachloride rather than to other chemicals that have been blamed. As with chloroform, the toxic effect is cumulative, so that small amounts repeated oftener than once in ten days, even though they produce no immediate symptoms of intoxication, may eventually cause serious damage to the liver. Calcium deficiency increases susceptibility to these chlorine hydrocarbon compounds. If a nurse is occupied with

dressings for several hours a day, even though the room is well ventilated, the use of carbon tetrachloride had best be avoided. See Tomb, J. W., and Helmy, M. M.: The Toxicity of Carbon Tetrachloride and Its Allied Halogen Compounds (*J. Trop. Med.* **36**:265 [Sept. 15] 1933).

ABNORMAL WHITE BLOOD CELL COUNTS

To the Editor:—Recently I attended a boy 16 years old who had lobar pneumonia and whose white blood count was so high that it could not be counted with the ordinary white pipet mixture. The red pipet was used and the dilution was 1:200 by sucking the blood up to 0.5 and the diluting fluid up to 101, and then the cells were so numerous that it was almost impossible to count them. In using the medium power and counting one of the larger corner squares on the counting chamber and multiplying this by 62 and then multiplying this result by 10 for the dilution, the number of white cells was 8,896,000. I have been doing blood work for years and know that my method was correct, but I have never seen anything like this and can find nothing like it in the books. Please inform me in what manner I could have made a blood mixture so that the white cells could be counted and also what you think of this excessive count. Many counts were made and they were all alike. Kindly omit name. M.D., Minnesota.

ANSWER.—White counts of such a degree have not been recorded in medical literature. Was the presence of such an abnormal count confirmed by means of a stained blood smear? One of the most common sources of error in obtaining such counts is the presence of mold in the diluting fluid. Mold grows rapidly in an acetic acid diluting fluid and may easily be mistaken for leukocytes under low power. This can be avoided by the use of fresh diluting fluid or by the addition of thymol or other preservatives to the diluting fluid. If any of the diluting fluid is left it would be advisable to examine it under the microscope to rule out the presence of mold. In counting blood with high white counts, the red counting pipet is used, a dilution of 1:200 being made. The average counts of the corner fields are then multiplied by 2,000.

POSSIBLE DEMENTIA PARALYTICA

To the Editor:—A man, aged 48, weighing 150 pounds (68 Kg.), a railroad brakeman, has had unsteady gait and has had to watch his feet for some time. When seen Oct. 6, 1935, he had had a "spell" in which there were incoordination, illusions and more or less muttering speech. The blood pressure at that time was 140 systolic, 78 diastolic, the knee jerk was absent and light reflex was absent, but otherwise the physical examination gave apparently normal results. The blood Wassermann reaction was 4 plus; no spinal test was made. I have proceeded on the assumption that the condition is a neurosyphilis and am giving tryparsamide, 2 Gm. intravenously, at weekly intervals. Now my questions is What should I give him as a rest from the present treatment and how long should I keep it up? The literature available to me gives such a number of drugs that I am at a loss to know which is best. Will you kindly tell me if I am correct so far and how to proceed further? Kindly omit name. M.D., Ohio.

ANSWER.—The diagnosis of this case is not neurosyphilis in the general sense. The patient probably has dementia paralytica, for which there is a specific remedy. He should be given a course of artificial fevers by means of malarial inoculations, following which tryparsamide should be used. If malaria is not available, enough typhoid vaccine should be used intravenously to raise the temperature to 104 or 105 F. in twelve separate treatments separated by two or three days' rest.

IMMUNIZATION AGAINST DIPHTHERIA

To the Editor:—At a recent medical meeting at Dallas, Texas, one of the distinguished and competent speakers suggested protecting children from diphtheria (by one of the three most used materials) at the age of 18 months to 2 years instead of the 6 months to 1 year suggested by all literature that I've read during the last three years. This was a distinct surprise to me as well as to many others with whom I discussed his advice. With the published reports in view, it seems to me to be bad teaching, even if it should become necessary to reprotect.

J. D. MICHIE, M.D., Childress, Texas.

ANSWER.—Most infants at birth are not susceptible to diphtheria. This is because of antitoxin present in the blood received from the mother. As the end of the first year of life is approached this antitoxin, for the most part, has been eliminated.

It is believed that there is greater antigenic response when little or no immunity exists than when partial immunity is present. For this reason it seems best not to administer toxoid before the twelfth month of life.

Diphtheria is infrequent under 1 year of age. From 1 to 2 years it is not rare. Therefore, it would seem better to immunize at 1 year than to wait until later unless one can have absolute assurance that the child will not be exposed to diphtheria in the meantime.

SENSITIVITY TO LIGHT

To the Editor:—I have a patient who is hypersensitive to the ultraviolet. She gets blistered, nervous, swollen and very toxic from the slightest exposure to the sun. Two years ago she had an excessive treatment with a General Electric house lamp and the hypersensitiveness has been the result. I understand that she develops hematoporphyria, which I have treated with intravenous sodium thiosulfate, but she still burns as easily as before. I will appreciate it if you can give me some information for the treatment of such a case.

L. S. BESSON, Portland, Ore.

ANSWER.—The patient was no doubt sensitive to light before she was exposed to the house lamp. One type of sensitiveness to light is caused by the presence of photodynamic substances in the blood or tissues. Of these substances hematoporphyrin is one.

The patient should be carefully protected from overexposure to light through the use of black or colored clothing, excluding blue, and through staying indoors on sunny days. The patients thrive better in a dark wet climate than in a dry sunny climate because of the fact that air moisture filters off some of the sun's rays at the violet end of the spectrum. The pathologic source of the hematoporphyrin production should be found if possible and removed. If this can be accomplished, the patient should improve after a period of months.

SKIN INFECTIONS IN BLONDES

To the Editor:—In an adequate series on my records, red haired people and light blondes show an unusual susceptibility to furuncles, carbuncles, respiratory infections and chronic hypochromic anemia. How do you account for this? Kindly omit name. M.D., New Jersey.

ANSWER.—There are some reasons for a greater susceptibility to infections on the part of extreme blondes. Their skins are apt to be drier as well as of finer texture and thinner than ordinary skins. They are therefore more easily irritated by trauma as well as by sunlight or cold wind, and the slight inflammations thus inaugurated reduce the skin's resistance to infection. The dryness of the skin means that its protective layer of lipids is deficient, and this may coincide with a deficient power of producing resistance to infection.

One form of hypochromic anemia, chlorosis, is said to occur more often in blondes, but as the discussions of the etiology of the hypochromic anemias has become more thorough the reference to blondes has been dropped. Chlorosis has become a rarity, which cannot be said of blondes. No reference has been found to a greater tendency of blondes to respiratory diseases. The same can be said with reference to furuncles and carbuncles. It is up to the doctor to present his statistics.

PAIN IN LIMBS AFTER CEREBRAL THROMBOSIS

To the Editor:—I have been bedfast since 1932 following a thrombosis, which caused a paralysis of the left leg and arm. The pain has been almost unbearable. Blocking of the nerves gave me relief for a short time, so I am looking for something to relieve me. I will appreciate any suggestions you may have to offer. M.D., Indiana.

ANSWER.—The description is too incomplete for a definite therapeutic suggestion. Assuming that the pain is in the paralyzed limbs and not due to constriction of peripheral vessels or to joint lesions, it is most likely due to involvement of the optic thalamus. If there is a real "thalamic syndrome" there should be some impairment of superficial and deep sensibility, especially in the distal parts, as well as some ataxia. However, if blocking of nerves gave sufficient temporary relief to suggest peripheral origin of the pain, one might consider such drastic procedures as chordotomy or sympathectomy. If the pain shows no tendency to decrease and resists reasonable doses of analgesic drugs, consultation with a neurologic surgeon would seem advisable.

SPINAL FLUID CELL COUNT IN MENINGITIS

To the Editor:—I have had some dispute as to the cell count in the different types of meningitis and would appreciate your sending me the latest account with the nearest number prevalent in these different forms and upon what amount of fluid is this estimate made.

DORIS SOLOMON, R.N., New York.

ANSWER.—The nearest number of cells per cubic millimeter in cerebrospinal fluid in different types of meningitis is as follows: tuberculous meningitis, 150; purulent meningitis of any type, 2,500. One must remember, however, that in tuberculous meningitis the cell count may vary from 30 to 1,000 cells. Likewise the cell count in purulent meningitis may vary from 200 to 25,000 cells. As a rule, the earlier in the disease the lumbar puncture is done, the fewer cells the fluid contains.

One drop of cerebrospinal fluid suffices for a cell count.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

ALABAMA: Montgomery, June 23-25. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ARIZONA: *Basic Science.* Tuscon, June 16. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson.

CONNECTICUT: *Basic Science.* New Haven, June 13. *Prerequisite to license examination.* Address State Board of Healing Arts, 1895 Yale Station, New Haven.

FLORIDA: Jacksonville, June 15-16. Sec., Dr. William M. Rowlett, P. O. Box 786, Tampa.

GEORGIA: Atlanta, June 10-11. Joint-Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

ILLINOIS: Chicago, June 23-26. Superintendent of Registration, Department of Registration and Education, Mr. Homer J. Byrd, Springfield.

INDIANA: Indianapolis, June 16-18. Sec., Board of Medical Registration and Examination, Dr. William R. Davidson, Room 5 State House Annex, Indianapolis.

IOWA: Iowa City, June 2-4. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 16-17. Sec., Board of Medical Registration and Examination, Dr. C. H. Ewing, 609 Broadway, Larned.

KENTUCKY: Louisville, June 10-12. Sec., State Board of Health, Dr. A. T. McCormack, 532 W. Main St., Louisville.

LOUISIANA: New Orleans, June 4-6. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MARYLAND: *Medical (Regular).* Baltimore, June 16. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Medical (Homeopathic).* Baltimore, June 9-10. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MICHIGAN: Ann Arbor and Detroit, June 9-11. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-3-4 Hollister Bldg., Lansing.

MINNESOTA: *Basic Science.* Minneapolis, June 2-3. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Medical.* Minneapolis, June 16-18. Sec., Dr. Julian F. Du Bois, 350 St. Peter St., St. Paul.

MISSISSIPPI: Jackson, June 22-23. Sec., State Board of Health, Dr. Felix J. Underwood, Jackson.

MISSOURI: St. Louis, June 4-6. State Health Commissioner, Dr. E. T. McGaugh, State Capitol Bldg., Jefferson City.

NEBRASKA: Omaha, June 9-10. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW JERSEY: Trenton, June 16-17. Sec., Dr. Arthur W. Belting, 28 W. State St., Trenton.

NEW YORK: Albany, Buffalo, New York, and Syracuse, June 22-25. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 15. Sec., Dr. Ben J. Lawrence, 503 Professional Bldg., Raleigh.

OHIO: Columbus, June 16-19. Sec., State Medical Board, Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: Oklahoma City, June 10-11. Sec., Dr. James D. Osborn Jr., Frederick.

OREGON: Portland, June 16-18. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland.

SOUTH CAROLINA: Columbia, June 23. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TEXAS: Austin, June 23-25. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bldg., Dallas.

VERMONT: Burlington, June 24. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 18-20. Sec., Dr. J. W. Preston, 28½ Franklin Rd., Roanoke.

WISCONSIN: *Basic Science.* Milwaukee, June 6. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Medical.* Milwaukee, June 30-July 3. Sec., Dr. Robert E. Flynn, 401 Main St., LaCrosse.

WYOMING: Cheyenne, June 8. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS. *Parts I and II.* June 22-24 and Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

SPECIAL BOARDS

AMERICAN BOARD OF OPHTHALMOLOGY: New York, Sept. 26. *All applications and case reports must be filed sixty days before date of examination.* Asst. Sec., Dr. Thomas D. Allen, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF PEDIATRICS: Albany, N. Y., June 10, Baltimore and Cincinnati in November. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF UROLOGY: Boston, May 22-24. Sec., Dr. Gilbert J. Thomas, 1009 Nicollet Ave., Minneapolis.

Arizona January Report

Dr. J. H. Patterson, secretary, Arizona State Board of Medical Examiners, reports the written examination held in Phoenix, Jan. 7-8, 1936. Eight candidates were examined, 6 of whom passed and 2 failed. Two physicians were licensed by reciprocity and 1 physician was licensed by endorsement. The following schools were represented:

School	Year Grad.	Number Passed
PASSED		
University of Southern California School of Medicine	(1935)	1
University of Michigan Medical School	(1930)	1
Duke University School of Medicine	(1933)	1
University of Oklahoma School of Medicine	(1935)	1
Hahnemann Medical Col. and Hosp. of Philadelphia	(1934)	1
Baylor University College of Medicine	(1931)	1

School	Year Grad.	Number Failed
FAILED		
University of Kansas School of Medicine	(1935)	1
University of Cincinnati College of Medicine	(1935)	1

School	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Chicago College of Medicine and Surgery	(1912)	Arkansas
Baylor University College of Medicine	(1933)	Texas

School	Year Grad.	Endorsement of
LICENSED BY ENDORSEMENT		
College of Medical Evangelists	(1935)	N. B. M. Ex.

Book Notices

The Diagnosis and Treatment of Diseases of the Peripheral Arteries. By Saul S. Samuels, A.M., M.D., Chief of the Clinic for Peripheral Arterial Diseases, Fourth Division, Bellevue Hospital, New York. Cloth. Price, $3.50. Pp. 260, with 51 illustrations. New York: Oxford University Press, 1936.

This book, by a surgeon, is concerned chiefly, as the author states in the preface, with treatment of diseases of the peripheral arteries. The author apparently did not intend that the volume should be a reference book, since many important contributions to the physiology, pathology and treatment of the diseases of the peripheral arteries are mentioned briefly or not at all and references in the text are not always included in the bibliography. The subject and author indexes are incomplete. The bibliography contains more references than are mentioned in the text. Raynaud's disease, erythromelalgia and arteriovenous fistula are dismissed with a few sentences, and nothing is said of the treatment of the last two mentioned conditions. Aneurysm and periarteritis nodosum are not mentioned. For these reasons the book cannot be said to be complete.

The author holds no brief for mechanical methods of diagnosis or evaluation of treatment except for the oscillometer, which is described in detail. He says that the skin thermometer "has furnished a playful apparatus to the dabbler in experimental therapy." Several students of arterial diseases have the same opinion regarding the oscillometer. The author appears to have the unique opinion that skin temperatures are of no value in determining changes in arterial circulation. He admits that the oscillometer is of no value in determining collateral circulation. Almost all physicians familiar with diseases of the peripheral arteries agree that determination of the skin temperatures under certain conditions is a valuable index of changes in the collateral circulation.

The chief value of the book is in the detailed presentation of the treatment of thrombo-angiitis obliterans and arteriosclerosis obliterans. Although exception might be taken to some of the statements regarding treatment which are clearly an exposition of the author's ideas, the results he reports are extremely good. The mainstays of treatment of thrombo-angiitis obliterans without ulceration or gangrene, according to the author, are absolute cessation of smoking, sitz baths, diathermy, postural exercises, intravenous injection of solutions of sodium chloride, and intramuscular injections of tissue extracts. The author interdicts the use of warmed environmental air because of the danger of burns, but he does not mention commercially available appliances that obviate this possibility by thermostatic regulation of the temperature of the air and protection of the sources of the heat so that the extremities cannot come in contact with them. Since heat can be applied constantly by this means while the patient is in bed, the appliances mentioned appear far superior to sitz baths, which the author recommends. He feels that contrast baths are dangerous, but this is rather an unusual opinion. He believes that intermittent negative and positive pressure is attended with considerable danger, but this opinion is directly opposite to that held by those who have used this method of treatment with reasonable care. The author does not favor intravenous injections of typhoid vaccine, apparently because such injections "may prove fatal." Other workers in this field have used this method of treatment with reasonable care in hundreds of cases without trouble. In considering sympathectomy, the author says "The fallacy of this form of treatment

remains in the fact that sponsors of these operations have placed too much emphasis on the vasomotor element of this disease." He seems to have overlooked the frequently repeated statement that sympathectomy is valuable only when vasospasm or incomplete vasodilatation can be demonstrated preoperatively. Diathermy is recommended without evidence that it increases circulation. It probably produces temporary vasodilatation, which the author indicates is largely valueless when produced by other simpler methods. He states that the sitz bath is superior to immersion of an upper extremity in a hot bath for increasing circulation but he does not support his opinion with evidence. The author appears to have had much success with intravenous injections of solutions of sodium chloride, which he believes increase pulse amplitude and thus the collateral circulation, although it is obvious that an increase in collateral circulation is difficult to prove, since skin temperatures are not elevated by this treatment. His enthusiasm for this type of treatment is not well supported by experience in other medical centers.

When gangrene or ulceration occurs, the author recommends absolute rest in bed, cessation of smoking, intravenous injections of salt solutions, and application of antiseptic solutions, wet dressings and anesthetic ointments, as indicated. Surgical conservatism is stressed. The author's ideas are minutely presented. One statement appears a bit emphatic: "It is no longer necessary to amputate a leg in thrombo-angiitis obliterans because of impending gangrene as has heretofore been the practice." Many clinicians particularly interested in thrombo-angiitis obliterans will be startled to know that amputation "has heretofore been the practice" for impending gangrene, but to those less experienced the statement is an emphatic and warranted denial of the necessity for performing amputation in such cases.

The author treats arteriosclerosis obliterans in much the same manner as he does thrombo-angiitis obliterans except that, when diabetes complicates occlusive arterial diseases attributable to arteriosclerosis, the presence of spreading infection necessitates amputation. The conservative use of amputation is again stressed as it is in the chapter on thrombo-angiitis obliterans, but no figures are given. The low incidence of amputation in both thrombo-angiitis obliterans and arteriosclerosis obliterans is remarkable, but the author does not state the period of follow up.

The book is valuable for what it is: a clear exposition of the author's recommendations for treatment of thrombo-angiitis obliterans and arteriosclerosis obliterans. It is unfortunate, perhaps, that many statements of vital importance are unsupported by evidence and that the author is frankly intolerant of or disbelieves observations made by others experienced in the treatment of vascular diseases.

Die Hautkrankheiten: Ein Buch für Ärzte und Studierende. Von Dr. Richard Rohrbach, Facharzt für Hautkrankheiten in Bremen. Paper. Price, 20 marks. Pp. 393. Dresden & Leipzig: Theodor Steinkopff, 1935.

Rohrbach presents a book for physicians and students in which skin diseases are grouped on biologic rather than morphologic lines. The book is composed of a general part, in which the various subjects are handled in much the same manner in which they are treated in the American textbooks, and a special part, divided into conditions of known etiology, under which is included the infectious skin diseases, embracing a discussion of the pyoderms, fungous and parasitic infections and other infectious conditions of the skin, and hereditary skin diseases, in which the significance of heredity in dermatology is discussed. The latter is grouped into dominant and recessive skin diseases. Under dominant the author classifies epidermolysis bullosa hereditaria, ichthyosis vulgaris, ichthyosis congenita universalis, neurofibromatosis, Darier's disease, keratoma palmare et plantare hereditarium, acne vulgaris, porokeratosis, vitiligo and rosacea. Xeroderma pigmentosum is the only condition classed as recessive. The section on allergic skin diseases embraces urticaria, eczema (including infantile eczema), angioneurotic edema, prurigo Hebra, strophulus and serum sickness, and endocrine diseases of the skin, under which are discussed Addison's disease, Simmond's disease, impetigo herpetiformis, dermatitis dysmenorrhoica, myxodema and acanthosis nigricans. Avitaminosis or deficiency diseases, under which scurvy is grouped, is further subdivided with hydroa vacciniforme and pellagra, grouped under the heading of avitaminosis with increased light sensitivity. Diseases associated with disorders of metabolism are discussed and include the entities psoriasis, xanthomatosis, amyloidosis, neurodermite, scleroderma, pemphigus, Duhring's disease, ulcus cruris and pruritus. The discussion of skin diseases produced by physical agents is presented also; as a subheading in this section the action of x-rays on healthy and diseased skin is discussed, and the last part deals with skin diseases produced by chemical agents and includes the drug eruptions or toxidermas as well as external irritant or occupational dermatoses.

Under the general heading of conditions of unknown etiology there is first discussed the abnormal conditions of the skin such as the atrophies and dystrophies. Under the latter is grouped pseudoxanthoma elasticum, livedo racemosa, seborrheas, parapsoriasis, diseases of the hair, diseases of the nails, and erythrodermias. Under chronic granulomas is included a discussion of lupus erythematosis, lymphogranulomatosis, mycosis fungoides, leukemias, granuloma pediculatum, molluscum contagiosum, lichen planus, and kraurosis vulvae. Neoplasms are subdivided into benign new growths of the skin, under which is included nevi, fibroma and keloids, lipomas, myomas, syringocystadenomas, adenoma sebaceum, warts, blue nevi, urticaria pigmentosa and cystic tumors. The second part deals with malignant growths, including a discussion of sarcomas of the skin, melanosarcoma, Bowen's precancerous dermatosis, and skin cancer. Special discussions treat the new advances in the study of allergy; five pages of text is devoted to the discussion of vitamins and four pages to hormones.

One notes a variation in the manner of classification of skin diseases as compared to that seen in the conventional American textbooks on dermatology. An attempt is made to group and discuss skin diseases as reactions of the skin as an organ, locally, to disturbances in the whole body. There are no illustrations to supplement the descriptions in the text. This is a drawback in a book intended for students and physicians who are not experienced in the diagnosis of skin diseases. The discussion of syphilis and the acute exanthemas, usually included in American textbooks of dermatology, is omitted.

The book gives a different point of view in the classification of skin diseases; although controversy may exist over the grouping of some of the cutaneous entities as given, it is a work deserving of a place in the library of those interested in this branch of medicine.

Psycho-Analysis for Teachers and Parents: Introductory Lectures. By Anna Freud. Translated by Barbara Low. Cloth. Price, $1.75. Pp. 117. New York: Emerson Books, Inc., 1935.

This book contains a series of four lectures delivered by Anna Freud to parents and school teachers in Vienna. It is a simple and authentic presentation of those most fundamental concepts of psychoanalysis which have a specific interest for parents and educators. The aim of the lectures is not only to give the audience an abstract view of the subject but to bring it into relation with the actual problems with which parents and educators have to cope. The four lectures are on (1) infantile amnesia and the Oedipus complex, (2) the infantile instinct-life, (3) the latency period and (4) the relation between psychoanalysis and pedagogy.

In the first lecture the author emphasizes that the 6 year old child with whom the teacher has to deal is by no means totally flexible but already constitutes a well defined little personality. The importance of the first five or six years of a child's development is stressed, and the amnesia covering these first years is explained. The child's emotional conflicts in relation to the siblings and parents are vividly and convincingly described as those events which specifically become the objects of the infantile amnesia but which at the same time have a dynamic effect on the child's later behavior and personality development.

The second lecture undertakes the difficult task of giving a popular description of the vast observational material regarding the first manifestations of the child's instinctual life and attempts to explain them as the different phases of an evolutionary process. The pregenital manifestations of sexuality as well as the early manifestations of genital impulses in children, a field that is difficult to discuss without provoking strong emotionally conditioned objections, are convincingly described.

The third lecture, devoted to the latency period, mentions the interesting fact that men of the present civilization have intuitively chosen the right time in which teaching of children can most advantageously start. This is the time around the sixth year, in which the first onslaught of the sexual instinct is abated and intellectual curiousity takes the place of the earlier and cruder manifestations of the instinctual life. The author in a brief and immediate fashion describes the formation during this period of the restrictive forces in the child's ego, the absorption by the child of the educational principles imparted to him by the parents in the form of the development of the superego.

In the last lecture the author turns to practical pedagogic problems and describes the two types of maladjustments in children: (1) the group of inhibited children, in which oversevere restrictions lead to the development of an inhibited personality and (2) the neglected youth which does not learn gradually the necessary restrictions of the instinctual life and becomes negativistic and refractory against the educational attempts during the latency period and later. The fact that children between the sixth year and puberty as a rule become less spontaneous and more dull than they were in their earlier years is explained by the author as the price which we have to pay for becoming civilized and domesticated. To minimize this dulling effect of restrictions and repressions is an important task of education, which at the same time has to avoid the other danger of giving unrestricted full rein to the manifestations of the child's original instinctual needs, which would make him later unsocial.

The author summarizes the benefits of the knowledge of psychoanalysis for teachers. Though psychoanalysis is unable as yet to formulate simple and practical pedagogic rules, its knowledge has significance for the teacher because (1) it offers a criticism of existing educational methods, (2) it extends the teacher's knowledge of human beings and his understanding of the complicated relationship between the child and the educator, and (3) as a method of therapeutic treatment, analysis of children is able to repair injuries that are inflicted on the child during the process of education.

The author ends her presentation with an instructive example of a teacher, showing how the emotional conflicts of this educator affected her relation to the child entrusted to her. This is the story of a governess who became very successful in influencing the development of a young boy who was retarded, timid and dull and who played a subordinate part in the family in contrast to his two gifted and attractive brothers. Under the influence of her loving attention this boy after a while became the most valued member of the family circle; but as soon as this success had been achieved the governess's relation to the boy changed, she had difficulties with him and finally had to give up his education. The explanation was that the governess herself in childhood was a neglected child and thus could identify herself with this neglected boy. As soon as he became successful he became associated in her mind with her successful siblings, and her reaction toward him became destructive. The author emphasizes that educators should know their own emotional weak spots in order to handle correctly the children in their charge.

New Principles of Anti-Rabic Treatment and Rabies Statistics: A Statistical and Experimental Study. By Maria J. Van Stockum. Volume I. Paper. Price, 4.80 guilders. Pp. 204. The Hague: Martinus Nijhoff, 1935.

This volume, by Maria J. Van Stockum of the Pasteur Institute, Bandoeng, Netherlands East Indies, is comprehensive and in two parts. Part I, on comparative rabies statistics, has three chapters, on a new method of analysis of rabies statistics, rabies statistics of natives in the Netherlands East Indies 1895-1932, and results obtained in other countries with the Hogyes method with rabbit fixed virus and with some methods with fixed virus killed or attenuated by means other than by drying. Part II is devoted to treatment accidents, with chapter 5 on the etiology and diagnosis of treatment accidents and on the prevalence of treatment accidents in those treated with the Pasteur and Hogyes methods.

The interest aroused by the title on the possibility of new principles of antirabic treatment is not sustained, for this portion of the title applies to the principles for handling rabies statistics. The author's treatment of the statistical data is worthy of detailed study. Aside from a realization of their actual worth, much valuable information is learned of the author's knowledge of the many sided rabies problems, which is profoundest in statistics and rather limited on the technical or research phase. No planned, controlled experimental testing is mentioned. The author's attitude is rather critical and seemingly unaware of several established procedures, as for example the continued and increasing use of phenolized rabies vaccine; he states that phenolized vaccines can no longer be advocated for immunizing purposes. Furthermore, the statement "The results of immunization as a rule largely depend on the species supplying the fixed virus in relation to the species to be immunized" is unsupported by experiment and general experience. Rabbit fixed rabies virus readily immunizes man and protection tests are recorded that dogs injected will withstand an infective dose of street virus.

The importance of early rabies vaccine treatment is well stressed, particularly for those victims in whom the period of incubation may be within thirty days; but the author seems still to be of the opinion that something worth while can be accomplished by adding doses to the treatment, particularly in cases with incubation periods of half or less than thirty days. Evidence exists that protection largely depends on the first few doses of the treatment. The use of solution of formaldehyde in the conversion of a toxin to a toxoid is stressed as a reason for replacing a phenolized with a formaldehydized rabies vaccine. No information is given about the prolonged effect of formaldehyde on rabies virus, which is undoubtedly made noninfective in twenty-four hours at 37 C. Unless the formaldehyde is removed it will affect the antigenic properties of the vaccine much quicker and more completely than phenol.

The two sets of conclusions are comprehensive and fully reveal the coverage of the volume. Those having to do with treatment accidents are not supported by informative data.

Teoria de los neoplasmas. Por S. Santamaria. Paper. Pp. 163, with 13 illustrations. Madrid: J. Pueyo, Imp., 1935.

The author proposes a new hypothesis for cancer, believing that it occurs only in species which reproduce themselves by amphimixis and not in those in which reproduction is parthenogenic, thus placing the responsibility on the combination of preexisting hereditary elements. A large portion of the discussion is based on a survey of the literature, chiefly drawn from paleontology and embryology. One illustration even is a reproduction of the famous buffalo from the walls of the caves of Altamira, presumably done some 30,000 years ago. Just how profitable such theoretical studies may be depends on the possibility of an experimental attack and this does not seem feasible from the author's presentation. A bibliography of thirty-four references is appended.

Textbook of Nursing Technique. By Irene V. Kelley, R.N., B.S., Director of Nursing Education, St. Alexis Hospital School of Nursing, Cleveland. Third edition. Cloth. Price, $2.50. Pp. 425, with 79 illustrations. Philadelphia and London: W. B. Saunders Company, 1935.

This is an excellent textbook of nursing technic or procedure. At the end of each section is the usual questionnaire for review and practical exercises. The work is systematically arranged and graded through the different periods of nursing training and study; the presentation of the subject matter is simple, complete and practical; numerous charts, tables and illustrations accompany the text. This work should prove valuable for all engaged in the study of nursing. Most physicians could read it with profit.

L'année thérapeutique: Médications et procédés nouveaux. Par A. Ravina. Neuvième année, 1934. Paper. Price, 18 francs. Pp. 191. Paris: Masson & Cie, 1935.

This is the ninth annual review of newer therapeutic procedures published in this series. Ravina endeavors to cover in this little volume the therapeutic progress that has occurred during the year not only in France but also in other countries. The topics are classified under three headings: (1) the treatment of diseases and symptoms, (2) new technics and apparatus, (3) new remedies. As some of our annual reviews published in the English language may be somewhat deficient in adequate presentation of progress as reported in French medical literature, this annual is always welcome.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Appendicitis Aggravated by Trauma.—An automobile driven by the deceased employee struck an elevation at a street intersection and skidded into a ditch, jarring and jolting the deceased. At the time of the accident, the deceased made no complaint of injury but about thirty minutes later, according to the testimony, he did complain that he had hurt his abdomen. Two days later an abdominal pain in the region of his stomach developed and on the sixth day after the accident an appendectomy was performed and a ruptured gangrenous appendix removed. Peritonitis and intestinal obstruction developed, resulting in the death of the employee three days later. The claimant instituted proceedings under the workmen's compensation act. The compensation commissioner disallowed compensation and, from a judgment by the trial court upholding the commissioner, the claimant appealed to the Supreme Court of Nebraska.

Prior to the accident, the deceased employee had had attacks of appendicitis. The claimant contended that the deceased sustained abdominal injuries when he was thrown against the steering wheel and that a preexisting chronic appendicitis was thereby aggravated. There was evidence that the preexisting abdominal condition might and probably would have been lighted up by the striking of the deceased's abdomen against the steering wheel. But, said the Supreme Court, there was no evidence that the deceased was thrown against the steering wheel at the time of the accident or otherwise sustained any injury to his abdomen. The complaint alleged to have been made by the deceased, thirty minutes after the accident, that he had hurt his abdomen, was clearly, in the opinion of the court, a narrative of a past transaction or event and was inadmissible in evidence. It was not a spontaneous or involuntary statement made during the happening of the event in proof of which it was offered as evidence. The declaration was, in other words, not a part of the res gestae. The most that the evidence showed, therefore, was the possibility or probability that the alleged injury could have happened at the time and place alleged. Awards of compensation cannot be based on possibility, probability, speculation or conjecture. The Supreme Court therefore affirmed the judgment of the trial court denying compensation.—*Milton v. City of Gordon (Neb.), 263 N. W. 208.*

Malpractice Insurance: Failure to Notify Insurance Company of Claim Filed Thirteen Years After Treatment.—The Aetna Life Insurance Company issued to Dr. Willis Walley, June 20, 1919, an insurance policy, to continue in force for one year, whereby it agreed to indemnify him against loss arising out of any claim based on malpractice. By the policy the physician was required to give immediate notice to the company of any claim made against him for damages. In January 1920 the physician operated on a patient and thirteen years later, in March 1933, he received notice from the patient's attorney making claim for damages based on the alleged failure to remove a drainage tube inserted during the course of the operation in 1920. The physician denied liability and suit was filed Nov. 28, 1933. The physician had not kept his insurance policy and did not remember by what insurance company it had been issued. He made no effort to ascertain the name of the company until after suit was actually filed. He did not learn the name of the company until February 1934, at which time the suit was at trial. The company then agreed to appear and defend the suit, provided the physician would agree that the insurance company should not be held to have waived its right to complain of the physician's delay in notifying it of the claim. The physician declined to do so, and the attorneys for the insurance company refused to defend the suit. Judgment was thereafter given for the patient. In the present suit, the physician sought to recover from the insurance company the amount paid by him under this judgment, and the expense incurred in defending the suit. The trial court gave judgment for the physician, and the insurance company appealed to the Supreme Court of Mississippi, division A.

The notice requirements in the insurance policy, said the court, conferred a valuable right on the company, the purpose of which was to enable it to investigate a claim against the insured covered by the policy, to decide whether the claim should be settled without litigation, and, if not, to prepare its defense. No such timely notice was given in the present case. The physician contended, however, that it was impossible for him to have given the notice earlier and that therefore he was excused from so doing. The impossibility, observed the court, did not arise because of the nature of the act to be performed, but wholly because of the inability of the physician himself to perform it. The failure of the physician to keep his policy occurred through his own fault. His delay, from March, when he first received notice of the claim, to December, shortly after suit was filed, to make any attempt to ascertain the name of the insurer constituted, in the opinion of the court, negligence. The Supreme Court, therefore, reversed the judgment of the trial court and gave judgment for the insurance company.—*Aetna Life Ins. Co. v. Walley (Miss.), 164 So. 16.*

Society Proceedings

COMING MEETINGS

American Association for the Study of Goiter, Chicago, June 8-10. Dr. W. Blair Mosser, 133 Bi dle St., Kane, Pa., Corresponding Secretary.
American Association for the Study of Neoplastic Diseases, Baltimore, June 11-13. Dr. Eugene R. Whitmore, 2139 Wyoming Ave. N.W., Washington, D. C., Secretary.
American Bronchoscopic Society, Detroit, May 27. Dr. Lyman Richards, 319 Longwood Ave., Boston, Secretary.
American Dermatological Association, Swampscott, Mass., June 4-6. Dr. Fred D. Weidman, Medical Laboratories, University of Pennsylvania, Philadelphia, Secretary.
American Gynecological Society, Absecon, N. J., May 25-27. Dr. Otto H. Schwarz, 630 S. Kingshighway Blvd., St. Louis, Secretary.
American Laryngological Association, Detroit, May 25-27. Dr. James A. Babbitt, 1912 Spruce St., Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Denver, May 18-20. Dr. C. Stewart Nash, 708 Medical Arts Building, Rochester, N. Y., Acting Secretary.
American Neurological Association, Atlantic City, N. J., June 1-3. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.
American Ophthalmological Society, Hot Springs, Va., June 1-3. Dr. J. Milton Griscom, 255 South 17th St., Philadelphia, Secretary.
American Orthopedic Association, Milwaukee, May 18-21. Dr. Ralph K. Ghormley, Mayo Clinic, Rochester, Minn., Secretary.
American Otological Society, Detroit, May 28-29. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
American Pediatric Society, Bolton Landing, N. Y., June 11-13. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.
American Physiotherapy Association, Los Angeles, June 28-July 2. Miss Jefferson I. Brown, Tichenor Hospital School, Long Beach, Calif., Secretary.
American Society for the Hard of Hearing, Boston, May 26-30. Miss Betty C. Wright, 1537 35th St. N. W., Washington, D. C., Secretary.
American Urological Association, Boston, May 18-21. Dr. Clyde L. Deming, 789 Howard Ave., New Haven, Conn., Secretary.
California Medical Association, Coronado, May 25-28. Dr. F. C. Warnshuis, 450 Sutter St., San Francisco, Secretary.
Conference of State and Provincial Health Authorities of North America, Vancouver, B. C., June 22-23. Dr. A. J. Chesley, State Department of Health, St. Paul, Minn., Secretary.
Connecticut State Medical Society, Hartford, May 20-21. Dr. Charles W. Comfort Jr., 27 Elm Street, New Haven, Secretary.
Illinois State Medical Society, Springfield, May 19-21. Dr. Harold M. Camp, 202 Lahl Building, Monmouth, Secretary.
Maine Medical Association, Rangeley, June 21-23. Miss Rebekah Gardner, 22 Arsenal St., Portland, Secretary.
Massachusetts Medical Society, Springfield, June 8-10. Dr. Alexander S. Begg, 8 The Fenway, Boston, Secretary.
Medical Library Association, St. Paul, June 22-24. Miss Janet Doe, 2 E. 103d St., New York, Secretary.
Montana, Medical Association of, Billings, July 8-9. Dr. E. G. Balsam, 208½ North Broadway, Billings, Secretary.
New Hampshire Medical Society, Manchester, May 26-27. Dr. Carleton R. Metcalf, 5 S. State St., Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 2-4. Dr. J. B. Morrison, 66 Milford Ave., Newark, Secretary.
North Dakota State Medical Association, Jamestown, May 17-19. Dr. Albert W. Skelsey, 20½ Broadway, Fargo, Secretary.
Pacific Northwest Medical Association, Portland, Ore., July 7-10. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Executive Secretary.
Rhode Island Medical Society, Providence, June 3-4. Dr. J. W. Leech, 167 Angell St., Providence, Secretary.
Society of Surgeons of New Jersey, Orange, May 27. Dr. Walter B. Mount, 21 Plymouth St., Montclair, Secretary.
Texas, State Medical Association of, Houston, May 25-28. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth, Secretary.
West Virginia State Medical Association, Fairmont, June 8-10. Mr. Joe W. Savage, Public Library Bldg., Charleston, Executive Secretary.

Current Medical Literature

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1926 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

31: 369-548 (March) 1936

Primary Squamous Cell Carcinoma in Body of Uterus. G. Gellhorn, St. Louis.—p. 372.

Puerperal Infection Due to Anaerobic Streptococci. O. H. Schwarz and T. K. Brown, St. Louis.—p. 379.

Pelvic Inclination. A. Y. P. Garnett and J. B. Jacobs, Washington, D. C.—p. 388.

Occipitoposterior Positions. S. A. Cosgrove, Jersey City, N. J.—p. 402.

*Outpatient Obstetrics: Review of Sixty-Eight Hundred and Sixty-Three Cases. H. Buxbaum, Chicago.—p. 409.

Occurrence and Significance of Decidual Changes of Endometrium in Extra-Uterine Pregnancy. R. S. Siddall, Detroit.—p. 420.

Study of Four Thousand Patients Admitted for Contraceptive Advice and Treatment. Ruth A. Robishaw, Cleveland.—p. 426.

Statistical Studies on Puerperal Infection: I. Some Factors Influencing Incidence of Puerperal Infection. C. H. Peckham, Baltimore.—p. 435.

Influence of Mental Attitudes in Childbearing. F. W. Dershimer, New York.—p. 444.

Record of Twenty-Six Cases of Rupture of Uterus. C. P. Sheldon, Albany, N. Y.—p. 455.

*Vascular Aspect of Eclampsia. F. C. Irving, Boston.—p. 466.

Injection Treatment of Varicose Veins in Pregnancy. C. Z. Nicholas, Santa Barbara, Calif.—p. 476.

The Heart in Uterine Myoma. M. S. Jacobs, Philadelphia.—p. 483.

Abscess of Ovary. W. T. Black, Memphis, Tenn.—p. 487.

Pelvic Measurements in White and Colored Female and Their Significance in Childbirth: Study of Fourteen Hundred Cases. W. T. Pride, Memphis, Tenn.—p. 495.

*Effect of Excessive Cigaret Smoking on Maternal Health. A. M. Campbell, Grand Rapids, Mich.—p. 502.

Use of Corpus Luteum in Treatment of Dysmenorrhea. R. E. Campbell and F. L. Hisaw, Madison, Wis.—p. 508.

Comparison of Different Methods for Measuring Renal Function During Pregnancy. R. H. Freyberg, J. L. Gillard and F. Ganesbauer, Ann Arbor, Mich.—p. 511.

Sodium Amytal and Morphine in Labor. I. Daichman and M. M. Shir, Brooklyn.—p. 515.

Effects of Radiation on Human Offspring: Present Day Views. J. R. Miller, Hartford, Conn., J. A. Corscaden and J. A. Harrar, New York.—p. 518.

Pregnancy Following Radical Resection of Rectum for Carcinoma. W. T. Pommerenke, Rochester, N. Y.—p. 522.

Report of Twenty-Two Latzko Cesarean Sections, with Modification in Technic. H. B. Perrins, New Haven, Conn.—p. 525.

Large Intramural Cysts of Uterus: Report of Case. E. C. Hamblen, Durham, N. C.—p. 530.

Cervical Carcinoma in Girl of Sixteen Years. D. B. Ludwig, Pittsburgh.—p. 536.

Chorioma (Chorio-Adenoma Type). J. J. Mundell, Washington, D. C. —p. 539.

Outpatient Obstetrics.—Buxbaum reports on 6,863 cases, in which 6,537 deliveries occurred in poorly furnished, insanitary homes during a period of two years. The operative incidence was about 4 per cent, of which 74 per cent were forceps deliveries. There were forty-five cesarean sections, an incidence of 0.65 per cent. The fetal mortality was 1.6 per cent, 104 deaths. The fetal mortality for forceps deliveries was 5.2 per cent; versions, 34.6 per cent; prolapsed cord, 29 per cent; rupture of the uterus, 100 per cent; breech presentation, 7.7 per cent, and cesarean section, 20 per cent. Twelve mothers died, three in their own homes, a maternal mortality of 0.17 per cent. The author states that conservative, patient management of obstetric cases, especially when delivered in the home, is undoubtedly the prime factor in keeping down an already unnecessarily high fetal and maternal mortality. While it is desirable to get a live healthy child, one is never justified in doing this at any moderate risk to the mother.

Vascular Aspect of Eclampsia.—Irving arrives at the following conclusions from a study of the pathology in preeclampsia and eclampsia. 1. There is considerable evidence that the disease is vascular in nature and may best be explained on the basis of arteriolar spasm. 2. Hypertension is probably a protective mechanism. Any measures directed solely toward a reduction of blood pressure are productive of little benefit. 3. Edema may cause considerable harm and active steps should be taken to bring about its removal. Free watery catharsis, produced by large oral doses of magnesium sulfate, is an effective method of reducing anasarca. Diuretics acting directly on the glomerular endothelium and epithelium are contraindicated, since owing to the nature of the lesion of the kidney they cannot be employed on a rational basis. The intravenous use of concentrated dextrose solution is sometimes useful in stimulating the secretion of the kidney when recovery is under way, but it is often of little benefit in the presence of complete, or almost complete, urinary suppression. 4. The best treatment for eclampsia is prophylaxis. For this reason each case of preeclampsia should be carefully studied from the aspect of abnormal physiology and delivery effected when improvement under treatment fails to take place.

Effect of Excessive Cigaret Smoking on Maternal Health.—Campbell submitted a number of questionnaires asking whether the smoking and inhalation of twenty-five or more cigarets daily have an unfavorable effect on maternal health. An analysis of the seventy-five replies received indicates that a cross-section opinion held by leading obstetricians of this country is unfavorable to smoking among expectant mothers, except in moderation. The author believes also that in many cases there is a strong susceptibility to nicotine, and that complete abstention is in many cases highly desirable and even necessary as one of the safeguards to maternal health. He has observed women who are not excessive smokers in whom the nervous, digestive, respiratory and circulatory systems have been noticeably affected. He believes that the indulgence of so many American women in the use of barbiturates and other sedatives for insomnia is frequently associated with excessive smoking. So far as the clinical symptoms are concerned which arise from excessive smoking or from susceptibility to nicotine, nearly all the important functions of the body are to some extent disturbed by it, and physicians should endeavor to evaluate properly its influence and specifically advise each patient who insists on smoking according to her sensitivity to it. Absorption of nicotine in some way produces definite histologic changes in the ovaries of rats, mice and guinea-pigs, which results in some instances in sterility and unhealthy offspring. The unfavorable effects of excessive cigaret smoking on maternal health are not sufficiently recognized and are of enough importance to demand a closer observation of clinical manifestations and a continuation of experimental work.

American Journal of Physiology, Baltimore

115: 1-248 (March 1) 1936. Partial Index

Blood Sugar, Inorganic Phosphorus and Phosphatase Activity Following Intravenous Injection of Calcium Salts. A. Cantarow, J. T. Brundage and E. L. Housel, Philadelphia.—p. 1.

Improved Gastric Test Meal and Study of Secretory Curve in Whole Stomach Pouches and in Normal Intact Stomach. C. M. Wilhelmj, F. T. O'Brien and F. C. Hill, Omaha.—p. 5.

Rate of Secretion of Bile. H. Koster, A. Shapiro and H. Lerner, Brooklyn.—p. 23.

Phenolsulfonphthalein Renal Function Test in Dogs. D. A. Collins, Minneapolis.—p. 27.

Excitatory Process in Mammalian Ventricle. Jane Sands Robb, Syracuse, N. Y., and R. C. Robb, Rochester, N. Y.—p. 43.

*Hydremia as Factor in Anemia of Pregnancy. H. Feldman, Evelyn C. Van Donk, H. Steenbock and E. F. Schneiders, Madison, Wis.—p. 69.

Coronary Blood Flow in Aortic Stenosis, in Aortic Insufficiency and in Arteriovenous Fistula. H. D. Green, Cleveland.—p. 94.

*Effect of Atropine and Pilocarpine on Emptying Time of Human Stomach. R. C. Herrin, Madison, Wis.—p. 104.

Changes in Tissue Metabolism in Estrual, Diestrual and Spayed Rats. J. Victor, Dorothy H. Andersen and Margaret R. Prest, New York.—p. 121.

Effects of Estrus and Spaying on Pituitary Metabolism. J. Victor and Dorothy H. Andersen, New York.—p. 130.

Diet in Relation to Reproduction and Rearing of Young. J. F. Feaster and V. E. Nelson, Ames, Iowa.—p. 147.

Individuality of Breathing. R. Gesell, Ann Arbor, Mich.—p. 168.

Vasomotor Responses of Mucosa of Upper Respiratory Tract to Thermal Stimuli. I. G. Spiesman, Chicago.—p. 181.

Effect of Radiation on Excitability of Smooth Muscle. S. A. Guttman and D. T. Wilber, Ithaca, N. Y.—p. 194.

Sterility in Rabbits Produced by Injections of Estrone and Related Compounds. G. Pincus and R. E. Kirsch, Cambridge, Mass.—p. 219.

Absorption of Water from Small Intestine at Various Degrees of Anoxemia. E. J. van Liere, N. A. David and D. H. Lough, Morgantown, W. Va.—p. 239.

Hydremia as Factor in Anemia of Pregnancy.—According to Feldman and his associates, determinations on the blood of normal pregnant women revealed an increase in water con-

tent with a concomitant fall in hemoglobin, cell volume and refractive index. As these data are similar to those previously obtained with the pregnant rat, it was considered possible that the hydremic condition might be general in the pregnant state. The dairy cow however proved to be an exception. Apparently in this species physiologic adjustments to changes in fluid secretion as well as to pregnancy are more easily made.

Effect of Atropine and Pilocarpine on Emptying Time of Stomach.—Herrin studied the effect of atropine and pilocarpine on the gastric emptying time in thirteen healthy persons. With one exception these were first and second year medical students. He observed that atropine increases both initial emptying and final emptying times of the normal human stomach. The lengthening of final emptying time is due to two delays in evacuation. One occurs during the first half hour after the meal and the other occurs near the end when the volume of gastric contents has become greatly reduced. These observations are interpreted as a demonstration of the importance of the vagus nerve in maintaining the gastric tonus and peristalsis necessary for a normal emptying of the human stomach. Pilocarpine in most of the subjects favored initial emptying. However, in ten of the thirteen subjects final emptying time was increased from a slight to a moderate degree. For about two thirds of the emptying, the rate with pilocarpine is as rapid as the normal or faster. The delay in evacuation comes only near the end. The favorable effect of pilocarpine on gastric evacuation demonstrates the value of strong gastric tonus and peristalsis in the mechanism of emptying and how these two factors can be heightened by vagal activity. The delay in the completion of evacuation may well be considered evidence of Thomas's enterogastric reflex. Atropine increased the initial emptying time in six of the eight subjects taking farina from 60 to 436 per cent and in three of the five subjects taking a gelatin meal from 57 to 222 per cent. The final emptying time was increased from 40 to 154 per cent in the eight subjects ingesting farina and from 4 to 95 per cent in the five subjects taking the gelatin meal before the injection of atropine. Pilocarpine decreased the initial emptying time in five of the eight subjects taking farina from 11 to 70 per cent, had no effect in one and markedly increased it in another. It shortened the initial emptying from 16 to 25 per cent in two of the five subjects taking gelatin. Pilocarpine increased the final emptying time in ten of the thirteen subjects from 5 to 71 per cent and shortened it immaterially in the others.

American Journal of Public Health, New York

26: 219-320 (March) 1936

Typhoid Vaccine Studies: Investigation of Virulence and Antigenic Properties of Selected Strains of Typhoid Organism. The Laboratory Staff, Army Medical School, Under Supervision of J. F. Siler, Washington, D. C.—p. 219.

Plumbing Hazard Survey of Pasteurization Plants. W. S. Johnson, St. Louis.—p. 229.

Eating Utensil Sanitation. J. G. Cumming and N. E. Yongue, Washington, D. C.—p. 237.

Biology of the Oyster in Relation to Sanitation. P. S. Galtsoff, Washington, D. C.—p. 245.

*Rapid Slide Test for Serologic Diagnosis of Typhoid and Paratyphoid Fevers. H. Welch and F. L. Mickle, Hartford, Conn.—p. 248.

Epidemic of Dengue. H. Hanson, Jacksonville, Fla.—p. 256.

Detection and Significance of Escherichia Coli in Commercial Fish and Fillets. F. P. Griffiths and J. E. Fuller, Amherst, Mass.—p. 259.

Can the Health Officer Safely Utilize Prophylactic Immunization as the Sole Means to Control Canine Rabies? H. W. Schoening, Washington, D. C.—p. 265.

Encephalitis of the St. Louis Type in Illinois. W. H. Tucker, Springfield, Ill.—p. 268.

Dust Determinations. E. C. Barnes, East Pittsburgh, Pa.—p. 274.

Fetal and Neonatal Mortality, with Recommendations for Reduction. F. L. Adair and Edith L. Potter, Chicago.—p. 281.

Rapid Slide Test for Serologic Diagnosis of Typhoid and Paratyphoid.—Welch and Mickle discuss a rapid slide test for the diagnosis of typhoid and paratyphoid. Concentrated antigens with undiluted serums are used. The test follows in general the Huddleson technic for the diagnosis of Brucella infection, the efficiency and accuracy of which have been demonstrated. The slide test for the diagnosis of typhoid and paratyphoid makes use of four antigens: an alcohol treated Eberthella typhosa O, Eberthella typhosa H, Salmonella paratyphi and Salmonella Schottmuelleri. The antigens are about the consistency of thin cream and are prepared by growing large quantities of organisms on agar in Blake bottles and washing the growth off with concentrated saline solution with formaldehyde. All antigens are standardized by titration against known positive and negative serums, the titers of which have been previously determined by a standard tube test technic. The test takes approximately four minutes to complete. The rapidity and ease with which it may be carried out in a routine manner seemed to the authors to be an important factor in public health laboratories when speed and accuracy in reporting results to physicians are necessary. In hospitals when an early exclusion of typhoid in certain undiagnosed cases is often important, the rapid slide test should be invaluable. The results obtained in a study of 1,100 serums indicate that the slide test is at least as sensitive and specific as the tube tests with which it was compared.

Annals of Surgery, Philadelphia

103: 321-480 (March) 1936

Liver Stones. I. G. Rufanov, Moscow, U. S. S. R.; translated by A. J. Walscheid, New York.—p. 321.

Congenitally Shortened Esophagus (Thoracic Stomach): Report of Two Cases Found Post Mortem. F. J. L. Blasingame, Galveston, Texas.—p. 337.

*Extension of Gastric Carcinoma into Duodenum. B. Castleman, Boston.—p. 348.

Gastric and Duodenal Perforation During Hospital Treatment. C. F. Vale and D. A. Cameron, Detroit.—p. 353.

*Factors in Mortality of Acute Appendicitis. A. C. Pattison, Iowa City.—p. 362.

Treatment of Gaseous Distention of Intestine by Inhalation of Ninety-Five Per Cent Oxygen: Description of an Apparatus for Clinical Administration of High Oxygen Mixtures. J. Fine, B. M. Banks, J. B. Sears and L. Hermanson, Boston.—p. 375.

Cyst of Wolffian Origin with Aplasia of Kidney and Ureter, Hydronephrosis and Undescended Testicle. D. R. Hardeman and A. De Groat, Little Rock, Ark.—p. 388.

Renal Lipomatosis. A. H. Peacock and A. Balle, Seattle.—p. 395.

True Hermaphroditism: Report of Case with Necropsy. H. J. Warthen and Pauline Williams, Richmond, Va.—p. 402.

Primary Carcinoma of Extremities. E. M. Bick, New York.—p. 410.

Electrosurgery in Advanced Carcinoma. T. de Cholnoky, New York.—p. 415.

Leptothricosis: Pulmonary Abscess and Fatal Pyemia. P. G. McLellan, Hartford, Conn.—p. 422.

Fractures of Jaw and Allied Traumatic Lesions of Facial Structures. H. H. Weisengreen and W. N. Levin, Fresno, Calif.—p. 428.

Nicola Operation for Recurrent Dislocation of Shoulder. D. P. Willard, Philadelphia.—p. 438.

Volkmann's Ischemic Contracture in Hemophilia. R. L. Hill, Honolulu, T. H., and B. Brooks, Nashville, Tenn.—p. 444.

Extension of Gastric Carcinoma into Duodenum.—Castleman states that from 1900 to 1931 at the Massachusetts General Hospital there were sixty-five necropsies in cases of carcinoma involving the pylorus. In many of these cases, sections from the tumor alone, without duodenum, were preserved. In six of these cases the growth had invaded the duodenum. During the years 1919 to 1934 inclusive the laboratory received 134 surgical specimens of stomach resected for pyloric carcinoma. In some specimens, sections of the duodenum were not preserved but, making no allowance for these, fifteen specimens showed duodenal extension. In 1934, when special attention was given to this subject, there were seven out of twenty-eight surgical cases that showed duodenal extension. This high percentage emphasizes the necessity for the pathologist to take sections of the duodenum in all cases of prepyloric carcinoma. The six cases from the necropsy group and the fifteen from the surgical group all showed microscopically definite carcinoma for varying distances beneath Brunner's glands. The extension rarely involved the mucosa but spread along the submucosa, often in lymph nodes. The extent of the duodenal invasion was measured in millimeters from the microscopic slide and, because of the marked shrinkage in the tissues due to fixation and dehydration, the figures were corrected to correspond to the gross specimens. This degree of shrinkage for tissues fixed in Zenker fluid, dehydrated in the alcohols and xylene and embedded in petrolatum, was found to be approximately 20 per cent. Nine of sixteen pylorectomies showed tumor cells at the extreme edge of the resection, apparently indicating that carcinoma was still present in the remaining duodenum; in only six was normal duodenum present beyond the farthest deposit of carcinoma. The sections from the necropsy cases were cut too short, because all six showed tumor at the extreme cut edge. The significance of the statistics is that the surgeon should resect more duodenum. The first portion of the duodenum measures on the average 5 cm.

This length should allow the surgeon to resect at least 3 cm. beyond the pylorus and still leave enough to fold in in the distal portion. If this procedure were followed there would be fewer specimens showing tumor at the distal cut edge and less recurrence along the line of closure.

Factors in Mortality of Acute Appendicitis.—Pattison believes that, if the patient is seen relatively early after perforation, the result of operative treatment is satisfactory, as evidenced by the low mortality rate in the group with local peritonitis. Also there are many patients in whom a perforation is suspected clinically but at the time of operation the pathologic condition is uncomplicated. In all probability this is the situation in many cases treated conservatively for a peritonitis in which an abscess never forms. Even in cases in which there is an advanced peritonitis immediate operation is indicated as long as the patient is in good condition, thereby eliminating the focus of the infection. The argument is advanced that operation traumatizes the peritoneum before immunity is established, and this is deleterious. Even if this were so, the operation can be done with a minimal degree of trauma by using a McBurney incision and spinal anesthesia and by handling all the tissues with extreme gentleness. For the most part, conservative treatment in cases with a spreading peritonitis is relegated to patients who are in any degree of shock or who are moribund on admission. The only other group of patients who should be treated conservatively on admission is the group with appendical abscesses whose symptoms have been present for less than seventy-two hours. In this group the abscesses are not adequately walled off to warrant operative manipulation. The total mortality rate for acute appendicitis in the author's hospital is 5.2 per cent. The mortality rate has increased approximately 1 per cent in the last ten years, in all probability as a result of an increase in the number of surgeons operating and the more frequent use of a right rectus incision. More than two fifths of all deaths occur in patients in the two extremes of life. An accompanying diabetes mellitus exerts a profound influence on the prognosis in acute appendicitis. The mortality rate for appendical abscesses is 8.6 per cent. Operation on these patients should be delayed until adequate walling off has been obtained. Single preoperative chills are of no prognostic value.

Archives of Internal Medicine, Chicago

57: 477-648 (March) 1936

Acute Anterior Poliomyelitis: Orthopedic Aspects of California Epidemic of 1934. J. C. Wilson and P. J. Walker, Los Angeles.—p. 477.
*Uncomplicated Auricular Fibrillation and Auricular Flutter: Frequent Occurrence and Good Prognosis in Patients Without Other Evidence of Cardiac Disease. E. S. Orgain, L. Wolff and P. D. White, Boston. —p. 493.
Meningitis Due to Type I Pneumococcus: Report of Case with Recovery Due to Serum Therapy. C. K. Weil, Montgomery, Ala.—p. 514.
New Formulas for Predicting Basal Metabolic Rate from Pulse Rate and Pulse Pressure. J. M. Read and C. W. Barnett, San Francisco. —p. 521.
*Changes in Temperature of Skin Following Ingestion of Food. G. Booth and J. M. Strang, Pittsburgh.—p. 533.
Clinical Value of Test for Hippuric Acid in Cases of Disease of Liver. A. J. Quick, Milwaukee.—p. 544.
*Hereditary Factor in Obesity. R. Gurney, Buffalo.—p. 557.
Recovery from Generalized Amyloidosis Secondary to Pulmonary Tuberculosis: Report of Case. M. B. Rosenblatt, New York.—p. 562.
Further Data on Artificial Pneumothorax in Experimental Lobar Pneumonia. L. M. Lieberman and S. S. Leopold, Philadelphia.—p. 566.
Relationship of Felty's and Allied Syndromes to Sepsis Lenta. H. A. Singer and H. A. Levy, Chicago.—p. 576.
How Arteries Compensate for Occlusion: Arteriographic Study of Collateral Circulation. E. V. Allen, Rochester, Minn.—p. 601.
Pneumothorax Therapy in Experimental Lobar Pneumonia in Dog: Report of Case in Man. G. L. Birnbaum and P. N. Coryllos, New York.—p. 610.
Bright's Disease: Review of Recent Literature. W. S. McCann, Rochester, N. Y.—p. 630.

Uncomplicated Auricular Fibrillation.—Orgain and his associates studied forty-nine cases of auricular fibrillation and seven cases of auricular flutter in none of which definite evidence of cardiac disease was demonstrated by history, physical examination, roentgen study or electrocardiograms of the patients. The ages of the patients in whom auricular fibrillation was present varied from 21 to 75 years. All save three cases were of the paroxysmal type; few paroxysms occurred in 46 per cent of these. Definite etiologic factors were few. Follow-up studies on 90 per cent revealed one probable death from cardiac disease four years after the onset of paroxysms of auricular fibrillation, six patients with cardiovascular complications which had appeared some years after the first auricular fibrillation, and one patient in whom hyperthyroidism had developed. The prognosis for life and for the maintenance of adequate cardiac function is, with rare exceptions, excellent and the outlook for improvement in the number of paroxysms is also good. Reassurance, the avoidance of exciting factors and the use of quinidine sulfate are regarded as the most useful therapeutic measures. The ages of the other seven patients ranged from 27 to 66 years. All attacks were paroxysmal and varied from one in three instances to innumerable attacks in the remainder. The duration of individual paroxysms was from a few minutes to five years, but usually several hours. Electrocardiographic proof of flutter was obtained in each case. The precipitating factor was clearly exertion in three cases; flutter followed a therapeutic malarial chill in one, and in another it appeared after the removal of a gangrenous appendix with the patient under ether anesthesia. Six patients have been followed up for from two to twenty-seven years after the onset: five are entirely well at the time of writing, and the remaining patient at 66, after twenty-seven years, has some dyspnea, cardiac enlargement, apical and aortic systolic murmurs and hypertension, but no signs of congestive failure. The seventh patient was last seen eighteen years after his first attack, when he had frequent paroxysms of auricular fibrillation and roentgen study showed slight enlargement of the left ventricle. Quinidine or its isomer quinine was used alone in five cases, being effective in restoring normal rhythm or preventing paroxysms in three and later proving ineffective in one of these. Digitalis restored normal rhythm in one of five cases in which it was tried. Quinidine after digitalization converted the rhythm to normal in two instances.

Temperature of Skin Following Ingestion of Food.—Booth and Strang observed the blood pressure and the temperature of the skin after a meal of meat designed to attain satiety on nineteen persons of normal weight and fourteen obese subjects. The response of the blood pressure was identical in the two groups and probably due solely to the work of eating. In the group of normal weight there was an elevation of the temperature of the skin, which began shortly after the start of the meal and reached a maximum of 2 C. (3.6 F.) in sixty minutes. The elevation of the skin temperature in the obese group was definitely diminished and delayed as compared with that of the group of normal weight. The difference in reaction may be one factor in the delayed sensation of satiety in obese persons and therefore a controlling factor in the determination of the large intake of obese persons.

Hereditary Factor in Obesity.—Gurney studied seventy-five stout women in the outpatient department of the Buffalo General Hospital with three points in mind: (1) the factors associated with the onset of obesity as compared with the same factors occurring in a not stout control group; (2) the incidence of obesity in the parents of the stout group as opposed to that in the parents of the not stout control group; (3) the body build of the progeny of different matings with especial reference to mendelian inheritance of build. Fifty-five women who were definitely not stout were chosen at random as controls. The control patients came from approximately the same age group and had approximately the same incidence of operations and pregnancies—the two most common factors apparently associated with the onset of obesity. Sixty-three women in the stout group gave a reliable history as to the onset of obesity. Of the forty-one of these who bore children, twenty-nine reported a direct association between pregnancy and the onset of obesity. Of the twenty-four who had major operations, seven reported a direct association between the operation and the onset of obesity. Of the remaining twenty-seven patients, four associated the onset of obesity with puberty and two with the menopause, eight maintained that they were "always stout" and thirteen apparently had no determinable factor associated with the onset of obesity. When the build of the parents of the stout and the control group is investigated, a difference in the incidence of obesity is apparent. Of the sixty-one stout women whose family history seemed unquestionably reliable, twenty-six had a stout mother, nine had a stout father and fifteen had both a stout mother and a stout father. In contrast to this, of the forty-seven not stout patients with an equally reliable family

history, fourteen had a stout mother, one had a stout father and three had both a stout mother and a stout father. This makes a total of 38 per cent, with either one or both parents stout, as opposed to 82 per cent in the stout group. If build is inherited, this inheritance must be along mendelian lines. A study of the progeny of different matings in this group shows a definite difference in variability. There were eighty-nine offspring from matings of stout persons, sixty-five of whom were stout. Of the 170 offspring of matings of a stout and a not stout person, seventy were stout. Of the 176 offspring of matings of persons who were not stout, only sixteen were stout. Thus there is present a marked difference in variability in the progeny of different matings. The fact that the offspring of stout parents are more variable than those of parents who are not stout suggests, as pointed out by Davenport, that stout persons carry gametes for slenderness, whereas persons who are not stout rarely carry gametes for stoutness. As a corollary to this, regression to a more normal build as a result of these gametes for slenderness can be seen in the offspring of stout parents to a considerably greater degree than in the offspring of slender parents. There appears to be no definite dominance in the series, which is not essential in mendelian inheritance.

Arkansas Medical Society Journal, Fort Smith

32: 161-180 (April) 1936

Acute Appendicitis in Infancy: Case Report. F. Krock, C. B. Billingsley and R. E. Weddington, Fort Smith.—p. 161.
Undulant Fever. H. A. Dishongh, Little Rock.—p. 164.

California and Western Medicine, San Francisco

44: 145-248 (March) 1936

Cardiac Care After Decompensation. R. M. Clarke, Los Angeles.—p. 153.
Aschheim-Zondek Test for Pregnancy. E. H. Ruediger, San Diego.—p. 157.
Cancer Studies: In Relation to Results of Treatment with an Aqueous Extract Made from Cortex of Suprarenal Gland: Five Year Review on Treatment Results in Inoperable and Hopeless Malignancies: Report on Seventy-Five Hundred and Thirteen Cases. W. B. Coffey and J. D. Humber, San Francisco.—p. 160.
Pathology of Sudden Operative Death. P. Michael, Oakland.—p. 179.
Injection of Sympathetic Nervous System. P. G. Flothow, Seattle.—p. 182.
Neurosyphilis: Its Treatment. N. N. Epstein, San Francisco.—p. 186.

Canadian Public Health Journal, Toronto

27: 105-156 (March) 1936

*Some Features of Epidemiology of Meningococcic Meningitis. G. Rake, New York.—p. 105.
First Production of Diphtheria Antitoxin in the United States. W. H. Park, New York.—p. 111.
Epidemic of Bacillary Dysentery in Matane, Quebec. A. R. Foley, Quebec, Que.—p. 113.
Cancer Control as Seen by the Public Health Nurse. Margaret I. Brady, Montreal.—p. 118.
Arsenical Poisoning Dermatitis. C. A. Cleland, Brockville, Ont.—p. 122.
Accidents and the Public Health, with Particular Reference to Automobile Accidents. A. H. Sellers, Toronto.—p. 125.
Mental Hygiene in Social Agencies Health Service. Euna P. Kennedy, Montreal.—p. 138.
The Quantitative Estimation of Indole by Means of Dialysis. D. C. B. Duff and R. Holmes, Vancouver, B. C.—p. 141.

Epidemiology of Meningococcic Meningitis.—Rake states that an examination of our knowledge of the epidemiology of meningococcic meningitis and of the relationship of the organism to the human host during the initial stages of infection becomes of the greatest importance. His discussion of some aspects of this knowledge reveals many "blind spots" in which comprehension is still very vague. 1. While some evidence has been obtained on the differentiation of parasitic and saprophytic strains, it is as yet much too scanty to form a sound basis of any definite generalization. 2. Certain accepted facts regarding the duration of the carrier state are open to question, and this question will have to be investigated anew. 3. Through the introduction of a new technic, it has been possible to carry out some investigation of the heretofore unknown comparative virulence of case and carrier strains. The results obtained are scanty but are sufficiently suggestive to warrant further work along these lines. 4. The precise relationship of the organism and the host during the carrier state is still unknown, though there is evidence that in certain cases it must be intimate and that it may be in the nature of an infection.

Journal of Biological Chemistry, Baltimore

113: 341-598 (March) 1936. Partial Index

Effects of Inhalation of Carbon Dioxide on Carbon Dioxide Capacity of Arterial Blood. H. E. Himwich, E. F. Gildea, N. Rakieten and D. Du Bois, New Haven, Conn.—p. 383.
Liver Injury by Chloroform, Nitrogen Metabolism and Conservation: Liver Function and Hemoglobin Production in Anemia. F. S. Daft, Frieda S. Robscheit-Robbins and G. H. Whipple, Rochester, N. Y.—p. 391.
Studies in Histochemistry: VI. Quantitative Distribution of Vitamin C in Small Intestine. D. Glick and G. R. Biskind, San Francisco.—p. 427.
Mechanism of Lysozyme Action. K. Meyer, J. W. Palmer, R. Thompson Devorah Khorazo, New York.—p. 479.
Gravimetric Methods for Determination of Total Body Protein and Organ Protein. T. Addis, L. J. Poo, W. Lew and D. W. Yuen, San Francisco.—p. 497.
Deuterium as an Indicator in Study of Intermediary Metabolism: V. Desaturation of Fatty Acids in Organism. R. Schoenheimer and D. Rittenberg, New York.—p. 505.

Journal of Lab. and Clinical Medicine, St. Louis

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Nature of Rheumatic Fever. H. F. Swift, New York.—p. 551.
Natural History of Childhood Rheumatism in Minnesota. M. J. Shapiro, Minneapolis.—p. 564.
*The Relationship Between Rheumatic Fever and Rheumatoid Arthritis. M. H. Dawson and T. L. Tyson, New York.—p. 575.
Geographic Distribution of Rheumatic Fever and Rheumatic Heart Disease in the United States. E. S. Nichol, Miami, Fla.—p. 588.
Outline of Studies Relating to Vitamin C Deficiency in Rheumatic Fever. J. F. Rinehart, San Francisco.—p. 597.
*Influence of Tonsils on Rheumatic Infection in Children. A. D. Kaiser, Rochester, N. Y.—p. 609.
Fever Therapy in Chorea and in Rheumatic Carditis With and Without Chorea. Lucy Porter Sutton and Katharine G. Dodge, New York.—p. 619.
*Theory Concerning Mechanism and Significance of Allergic Response. W. T. Vaughan, Richmond, Va.—p. 629.
Cultural Method for Diagnosis of Gonorrhea Employing Direct Oxydase Reaction. C. L. Spohr and M. Landy, Columbus, Ohio.—p. 650.
Animal Growth and Space Restriction. I. N. Kugelmass and Emma Louise Samuel, New York.—p. 655.

Relation Between Rheumatic Fever and Rheumatoid Arthritis.—Dawson and Tyson state that the current tendency in American and English clinical medicine to regard rheumatic fever and rheumatoid arthritis as separate and distinct diseases does not meet with universal favor. The authors offer evidence in support of the hypothesis that the two diseases are intimately related and possibly different manifestations of the same fundamental pathologic process. They consider the following phases of the problem: familial relationship, geographic distribution, initiating factors, seasonal incidence, age incidence and clinical manifestations in different age periods, pathologic similarities and immunologic observations. The relationship between rheumatic fever and rheumatoid arthritis is at the present time of greater theoretical than practical importance. For clinical purposes it is important that the two should be differentiated whenever possible, for in typical cases each presents its own symptoms, each demands its own therapeutic management and each requires its own prognosis. For theoretical reasons a clearer understanding of the nature of the relationship of the two diseases is of great importance and may contribute much to the knowledge of both conditions. The clinical evidence presented suggests that rheumatic fever and rheumatoid arthritis form a continuous sequence of one disease process with different expressions in each individual phase. These different expressions appear to be in large measure determined by the age of the patient, but undoubtedly other factors, such as individual host susceptibility, are also of importance. The pathologic evidence, representing a difference in degree rather than in kind, strongly suggests that the two represent different responses to the same, or closely related, etiologic agents. A final understanding of the relationship between rheumatic fever and rheumatoid arthritis will not be possible until the etiology of both diseases has been definitely established. At present there is a certain amount of evidence suggesting that infection by Streptococcus haemolyticus plays a part in the production of both diseases. However, this evidence is as yet far from complete and, even if it could be established that the two diseases are due to the same agent, it would not prove their identity.

Influence of Tonsils on Rheumatic Infection.—To estimate the incidence of rheumatic infection in children whose tonsils have been removed and in those whose tonsils have not been removed, Kaiser had the parents of 48,000 children inter-

viewed. Of this number, 20,000 children had been tonsillectomized and 28,000 had not had their tonsils removed. Based on data obtained from the parents, nearly all the rheumatic manifestations occurred less commonly among tonsillectomized children. Rheumatic fever, which is usually a severe type of rheumatic infection, was reported with considerably less frequency in the tonsillectomized children. Among the tonsillectomized children there were 37 per cent fewer cases of rheumatic fever. Muscular rheumatism, termed growing pains, was reported only slightly less often in tonsillectomized children. Chorea was noted with equal frequency in the two groups, while rheumatic carditis was somewhat less common among the tonsillectomized children. The statistical information based on the parents' history of the child leaves some uncertainty in the value of the data. It does, however, clearly indicate that rheumatic disease occurs in children whose tonsils have been removed, and it also seems highly probable that initial attacks of rheumatic infection are somewhat less likely to develop in children whose tonsils have been removed. Recurrent attacks of rheumatism occurred as frequently in tonsillectomized children as in the untreated ones at all ages, except between the ages of 10 and 15, when recurrent attacks are less common in both groups. Though the number of recurrences of such manifestations as rheumatic fever, chorea and muscular pains was not lessened by removal of the tonsils, it was demonstrated that carditis associated with recurrent attacks of rheumatic fever and chorea was somewhat less severe in the tonsillectomized children. Though the removal of the tonsils fails to decrease the number of recurrences of rheumatic infections, there is a decidedly lower mortality rate among these children. If other studies show similar results, there is a definite indication in every rheumatic child for the removal of the tonsils.

Mechanism of Allergic Response.—Vaughan explains the allergic response as an integrated reaction complex, fundamentally protective in nature but defective in execution, since it lacks coordination and a directing influence. It is, in essence, a manifestation of environmental maladjustment. Given sufficiently heavy exposure (contact, meteorological, food, infectious), 100 per cent of the population is capable of responding abnormally, either with hyperergy or allergy. There appear to be all grades from those who are extremely susceptible to those who are extremely insusceptible. Heredity and the nature of the exciting factor appear to play a part in determining susceptibility. Heredity represents either a congenital inability to adjust or a congenital predisposition to maladjust. Such a person is often spoken of as vagotonic. The mildly allergic individual may become sensitive to a relatively new or strange allergen with which he comes into only occasional contact. The person with high susceptibility may become sensitive to these and also to those substances with which he comes in frequent or constant contact. If susceptibility to the development of allergy varies from 0 to 100 per cent, one would expect occasionally to find persons who are allergic to practically everything. Such types, although fortunately uncommon, undoubtedly do exist. Until now chief effort has been given to neutralization or counteraction of a specific response to recognized specific allergens. It seems possible that efforts to develop a nonspecific or physiologic means of controlling the perverted, disoriented reaction of protection so that it may become a normal oriented reaction might actually lead to the discovery of a remedy that will adequately control the response, irrespective of the activating cause.

Kentucky Medical Journal, Bowling Green

34: 83-128 (March) 1936

*Hematologic Reactions Following Arsphenamines. M. L. Rich, Covington.—p. 94.
Injuries of the Hand. S. L. Koch, Chicago.—p. 101.
Epidemiology of Poliomyelitis. H. R. Leavell, Louisville.—p. 110.
The Pathology of Poliomyelitis. A. J. Miller, Louisville.—p. 113.
Clinical Aspects of Poliomyelitis. W. W. Nicholson, Louisville.—p. 115.
Orthopedic Treatment of Poliomyelitis. R. T. Hudson, Louisville.—p. 117.
Constitutional and Acquired Factors in Resistance to Tuberculosis. E. R. Long, Philadelphia.—p. 124.

Hematologic Reactions Following Arsphenamines.—In summarizing the toxic manifestations of arsphenamine on the blood, Rich finds that it may act in two ways: 1. It is capable of destroying some of the circulating elements, the platelets and the white cells in particular. This type of reaction comes on immediately or shortly after the injection and is not serious. Recovery occurs within a few days. 2. It may cause an aplasia of one or all of the hematopoietic tissues in the marrow, depending on the degree of poisoning. In the less serious cases only the platelets or the granular cells are involved, while in severe cases all the marrow elements are affected. This reaction is more delayed than in the peripheral type and has a high mortality. Recovery, if it does occur, is slow. These reactions are frequently preceded by minor toxic manifestations. Symptoms of purpura, pallor, weakness or sore throat should be regarded as such, and further treatment should be withheld until the blood is examined. A white count alone will be sufficient in most cases; if it is 4,000 or more, it is probable that the marrow has not been affected. Only in this manner will one be able to forestall the more serious reactions. Little can be said with regard to the treatment of the blood dyscrasias, once they have occurred. The peripheral type needs no treatment other than symptomatic relief. When there is actual depression of the marrow, the problem is different. The patient must be tided over with a minimal risk of infection until the marrow regains its ability to produce cells. Transfusions of whole blood accomplish this best. They should be given at frequent intervals to maintain the count as high as possible. Of equal importance with the blood transfusions is proper oral hygiene to prevent, if possible, the stomatitis and angina. The diet should be nourishing and rich in vitamins. Iron and liver are frequently prescribed. If recovery should occur, it must be emphasized that further treatment with arsphenamines must never be given.

Medical Bull. of Veterans' Adm., Washington, D. C.

12: 333-438 (April) 1936

Observations of Russian Neuropsychiatrist in Ethiopia During War with Italy in 1896: Historical Note. M. K. Amdur and H. M. Cleckley.—p. 333.
Untoward Results of Phrenic Nerve Operations. A. G. Walker.—p. 338.
Simple Method for Identification of Phrenic Nerve. A. S. Broga.—p. 343.
Effects of Long Hospitalization on Psychotic Patients. E. F. Bogen.—p. 345.
Changing Concept of Bright's Disease. E. M. Barnes.—p. 354.
Familial Amyloidosis: Case Reports. E. S. Maxwell and I. Kimbell.—p. 365.
Suggestions for Repair of Hernia of Intestines. O. M. Warner.—p. 370.
Avertin. N. H. Badaines.—p. 373.
Use of Quartz Glass in Promoting Heliotherapy. R. L. Cook and Mabel C. Ryan.—p. 379.

New England Journal of Medicine, Boston

214: 563-612 (March 19) 1936

Gastroscopic Observations in Neoplasm. E. B. Benedict, Boston.—p. 563.
*Salmonella Suipestifer Infection with Surgical Complications. I. J. Walker, Soma Weiss and R. N. Nye, Boston.—p. 567.
Cancer of the Mouth, Care of the Patient Utilizing Prolonged Anesthesia Obtained by Alcohol Injection of Branches of the Fifth Nerve. H. F. Hare, J. L. Poppen and W. B. Hoover, Boston.—p. 572.
The Psychogenic Problem (Endocrine and Metabolic) in Chronic Arthritis. H. A. Nissen and K. A. Spencer, Boston.—p. 576.
Unusual Fracture of Lower End of Radius (Atypical Colles's). D. P. Penhallow, Washington, D. C.—p. 581.
Proposal for Clinicopathologic Conference. R. H. Goodale, Worcester, Mass.—p. 582.
Pregnancy in Bicornate Uterus: Case Report. M. W. Pearson and H. W. Angier, Ware, Mass.—p. 583.

Salmonella Suipestifer Infection with Surgical Complications.—Walker and his associates report two cases with localized surgical lesions due to the American type of Salmonella suipestifer. In the first case following a transient bacteremia, a metastatic splenic abscess developed, causing the clinical picture of left subdiaphragmatic abscess. Surgical drainage of the abscess relieved the patient. In the second patient, Salmonella suipestifer was responsible for cholecystitis with the usual clinical course. In spite of the fact that both patients were adults, suipestifer infections in man have been reported most commonly in babies and children. Unless serologic and bacteriologic studies are complete, many of the lesions associated with Salmonella suipestifer will be attributed to some unidentified gram-negative motile organism. Localized surgical lesions associated with Salmonella suipestifer are

rather rare and they are similar to the surgical complications of typhoid and paratyphoid. Suipestifer abscesses, in the majority of instances, occur probably as the result of septicemia secondary to a gastro-intestinal infection due to contamination of food with Salmonella suipestifer.

New Jersey Medical Society Journal, Trenton

33: 127-186 (March) 1936

Surgical Treatment of Massive Hemorrhage of Peptic Ulcer. L. G. Beisler, Hillside.—p. 133.
Chronic Prostatitis. H. M. Ill, Newark.—p. 136.
Prophylaxis of Communicable Diseases: Article Number One. M. L. Ripps, Elizabeth.—p. 139.
Early Diagnosis in Abdominal Surgery. E. L. Eliason, Philadelphia.—p. 143.
Simple Diet for Ambulatory Diabetic Patients. B. Saslow, Newark.—p. 144.
Familial Hemolytic Jaundice. J. G. Kaufman, Newark.—p. 150.
Clinical versus X-Ray Study in Acute Mastoiditis. C. W. Barkhorn, Newark.—p. 153.
The Operative Treatment of Concomitant Squint. A. B. Reese, New York.—p. 159.
Schüller-Christian's Disease: Report of Case. S. A. Levinsohn, Paterson.—p. 163.

New Orleans Medical and Surgical Journal

88: 543-600 (March) 1936

The Pathologist's Part in Malignant Disease from the Surgeon's Point of View. U. Maes, New Orleans.—p. 543.
The Constitutional Basis of Trachoma. H. Schroeder, New Orleans.—p. 547.
Gynecologic Aspects of Low Back Pain. J. F. Dicks, New Orleans.—p. 554.
Urologic Aspects of Low Backache. J. G. Pratt, New Orleans.—p. 556.
Orthopedic Aspects of Low Back Pain. G. C. Battalora, New Orleans.—p. 558.
*"Liver Deaths" in Surgery: Analysis of Thirty-Four Cases, with New Explanation of Clinical and Pathologic Picture. F. F. Boyce and Elizabeth M. McFetridge, New Orleans.—p. 563.
Calcium Dextrose Therapy in the Late Toxemias of Pregnancy. A. A. Landry, Plaquemine, La.—p. 567.
What the Physician Should Know from the Coroner's Standpoint. C. G. Cole, New Orleans.—p. 573.
Modern Therapy in Treatment of Burns. J. H. Connell, New Orleans.—p. 575.

Liver Deaths in Surgery.—Boyce and McFetridge analyze twenty-three deaths following biliary surgery, five following pancreatic surgery and six following liver trauma, all of which are indubitable instances of the so-called liver-kidney syndrome. A brief report is also made of the same syndrome in burns, intestinal obstruction and thyroid disease. From their experimental work they feel justified in drawing the following conclusions: 1. The renal changes found at necropsy are the end result of the release of the biliary obstruction and not of the obstruction itself, since they were absent in the dogs that were killed for necropsy before their experimental obstruction was released. 2. Hepatic changes are a constant concomitant of any cholecystic disease, but the extreme changes seen in this type of case are not so much the result of the original obstruction as of its release. 3. Whatever may be the nature of the toxic substance present in the liver in such cases, it is water soluble, since the typical picture could be reproduced only by aqueous and saline extracts made from the liver of the patient who died a "liver-kidney" death after cholecystectomy and not by the alcoholic extract. The authors feel almost certain that they could have reproduced the same picture with extracts made from the livers of the dogs which died a uremic death after release of their experimental biliary obstruction had they used them in stronger concentration. They are conducting a series of experiments to determine this point. Their combined experimental and clinical observations have led them to evolve the following explanation of the liver-kidney syndrome: The patient with biliary disease exhibits some degree of liver damage, which is not incompatible with the stress and strain of ordinary life. But when surgery is undertaken, even under the most favorable circumstances, other factors are introduced, and with these new factors the liver, already the seat of a pathologic process, cannot cope. As a result its function promptly fails, and the toxic substances that reach it in the course of normal body metabolism are thrown off undetoxified. The kidney, which is, after the liver, the great detoxifying organ of the body, must take up the work of the liver purely as a physiologic matter, when the detoxifying function of the liver fails. But in the kidney the margin of safety is very slight, it promptly breaks down in its turn and an overwhelming and lethal toxemia is the natural consequence. The hepatic changes in these cases always precede the kidney changes, and, if the patients who die promptly with hyperpyrexia and who exhibit liver degeneration at necropsy could be kept alive long enough, they would show precisely the same clinical and postmortem renal changes as do the patients who die later with typical symptoms of uremia.

Psychoanalytic Quarterly, Albany, N. Y.

5: 1-146 (Jan.) 1936

Inhibitions, Symptoms and Anxiety. S. Freud, translated by H. A. Bunker.—p. 1.
The Problem of Negative Therapeutic Reaction. Karen Horney, New York.—p. 29.
The Principle of Multiple Function: Observations on Overdetermination. R. Wälder, Vienna, Austria, translated by Marjorie Haeberlin Milde.—p. 45.
Fetishism: Two Cases. E. Kronengold and R. Sterba, Vienna, Austria, translated by Bettina Warburg.—p. 63.
Ego Dangers and Epilepsy. Margaret Ribble, New York.—p. 71.
Endocrine Approach to Psychodynamics. R. G. Hoskins, Boston.—p. 87.
Psychoanalytic Note on Jane Austen. Clarissa Rinaker, Urbana, Ill.—p. 108.

Public Health Reports, Washington, D. C.

51: 241-262 (March 6) 1936

Prevention of Intravenously Inoculated Poliomyelitis of Monkeys by Intranasal Instillation of Picric Acid. C. Armstrong.—p. 241.
The Transplantation of Splenic Tissue in Mice. J. J. Bittner.—p. 244.

51: 263-284 (March 13) 1936

The Official United States and International Unit for Standardizing Gas Gangrene Antitoxin (Oedematiens). Ida A. Bengtson.—p. 266.

Radiology, Syracuse, N. Y.

26: 261-390 (March) 1936

Diagnosis of Bronchial Carcinoma: Clinical and Roentgenologic Study of Fifty Cases. J. T. Farrell Jr., Philadelphia.—p. 261.
Correct Diagnosis of the More Common Urologic Lesions. E. L. Shiflett, Indianapolis.—p. 270.
Roentgen Diagnosis of Lesions of Lower Urinary Tract. C. L. Gillies and H. D. Kerr, Iowa City.—p. 286.
*A 1936 Survey of Biologic Effects of X-Radiation. G. L. Clark, Urbana, Ill.—p. 295.
Fibroids and Abnormal Uterine Bleeding: Treated by Roentgen Ray and Radium: Analysis of One Hundred and Sixty Consecutive Private Practice Cases. A. H. Williams, Grand Rapids, Mich.—p. 313.
Guarded Field X-Ray Ionization Chamber: Note. L. S. Taylor and G. Singer, Washington, D. C.—p. 322.
*Diverticulum of Cardiac End of Stomach: Report of Case. L. Nathanson and M. Steiner, Brooklyn.—p. 326.
Effect of Ultrahigh Voltage in Gynecologic Carcinomas: Preliminary Report. H. Schmitz, Chicago.—p. 331.
Displacements of Left Kidney in Diagnosis of Tumors of Left Flank and Abdomen. P. Shambaugh, Boston.—p. 335.
Value of Left Anterior Oblique Position in Cholecystography. S. Zaldin, Brooklyn.—p. 340.
Diagnostic Features of Ileus. E. L. Eliason and J. Johnson, Philadelphia.—p. 342.
Epithelioma of the Lip. C. B. Ward, Seattle, and A. Betts, Spokane, Wash.—p. 349.
Tissue Dosage from Interstitial Radiation. M. C. Reinhard and H. L. Goltz, Buffalo.—p. 356.
Some Lawsuits I Have Met and Some of the Lessons to Be Learned from Them (Seventh Instalment). I. S. Trostler, Chicago.—p. 360.

Biologic Effects of X-Radiation.—Clark believes that the undoubted value of x-rays as a research tool to the biologist in the field of genetics has been convincingly demonstrated in the last few years by the work of Müller of Texas and a number of other workers. Much less well known are the great possibilities of cell studies depending on an increasingly quantitative evaluation of characteristic radiosensitiveness, which may well become the most powerful method of pathologic diagnosis. Uncertainty remains as to fundamental differences between normal and pathologic tissues, and the mechanism involved in radiobiology and therapy of cancer cells. It has seemed desirable to the author, therefore, to summarize briefly the present knowledge of the biologic effects of x-radiation, under the following heads: bactericidal and general lethal effects, biologic dosimeters, effects on the hereditary material, effects on normal cells, the radiosensitiveness of cells, recovery and the time factor, x-ray effects on human tissues, the stimulating effect of x-rays, photochemical experiments with a possible bearing on biologic effects, medical implications of cell radiosensitivity

and reactions to radiation, with especial reference to cancer and a new x-ray method (x-ray diffraction method of structure analysis) of pathologic diagnosis.

Diverticulum of Cardiac End of Stomach.—Nathanson and Steiner report a case of diverticulum of the stomach occurring in a male and found together with a duodenal ulcer. Relatively few of the patient's symptoms were characteristic of duodenal ulcer but could be attributed to the diverticulum. Chronic constipation with severe straining at stool for many years undoubtedly produced increased intra-abdominal pressure and was probably a contributing cause.

Wisconsin Medical Journal, Madison

35: 169-252 (March) 1936

The Management of Organic Peripheral Vascular Diseases. L. G. Herrmann, Cincinnati.—p. 185.
*A Survey of Urinary Frequency in Women. J. B. Wear, Madison.—p. 189.
Clinical Experiences with Ultra Short Wave Therapy. W. J. Egan, Milwaukee.—p. 192.
Nephrolithiasis and Bone Disease. I. R. Sisk, Madison.—p. 195.
Experiences with Forced Spinal Drainage of the Central Nervous System. H. H. Reese and I. B. Shulak, Madison.—p. 200.
Pathologic Conditions of the Female Urethra. C. G. Richards, Kenosha.—p. 205.
The Decline of Diphtheria in Fever Hospital. M. J. Fox, Milwaukee.—p. 207.

Urinary Frequency in Women.—Wear points out that the three regions that are most likely to be the seat of trouble in extra-urinary tract frequency are the central nervous system, the pelvis and the perineum; therefore a rather strict routine procedure should be adopted in efforts at diagnosis. Particular attention should be paid to (1) the duration of the frequency (many of the nonspecific infections of the urinary tract are self limited, and the longer the symptom has persisted the more serious the factors likely to be present); (2) whether the frequency is constant or intermittent and if anything seems to influence it; (3) whether it is worse in the daytime or at night, and if at night whether it awakens the patient from sleep. Many times patients will complain of frequency, yet they will never have to get up at night. In the physical examination the central nervous system should be carefully ruled out. A competent pelvic examination must be done, including a visual inspection of the cervix and urethra. An examination of the abdomen will reveal enlargement in the kidney regions and a distended or tender bladder. Then special and laboratory examinations should be performed. Much valuable information may be had from a catheterized urine, and an uncatheterized urine that contains pus is valueless in the female. A visual and instrumental investigation of the urethra will establish the presence of urethral stricture, caruncle or urethritis. The plain flat plate will rule out in most cases the presence of renal, ureteral or vesical calculi, as well as the possible presence of a spina bifida occulta. A roentgenogram of the bladder filled with some radiopaque solution will aid in the diagnosis of diverticula and malignant growths. The records of 100 women examined by the urologic department for urinary frequency were investigated. Eighteen different diagnoses were made. The most common condition found was that of low grade chronic pyelonephritis of one or both sides. In sixty-one cases the primary involvement was found to lie above the bladder. In seventeen the trouble was found to lie below the bladder, in eight the bladder was the primary seat of involvement and in eleven cases the pathologic changes were found outside the urinary tract. In three cases no cause for the frequency could be found. The bladder showed no visual evidence of pathologic change in thirty-eight cases. This establishes the fact that urinary frequency does not always indicate that the bladder is the primary seat of the pathologic change.

Yale Journal of Biology and Medicine, New Haven

8: 337-420 (March) 1936

Thomas Miner, M.D., of Middletown: Early Connecticut Physician of Exceptional Culture. F. K. Hallock, Cromwell, Conn.—p. 337.
Papillary Adenoma of Corpus Uteri: Note. A. A. Liebow, New Haven, Conn.—p. 353.
Immunizing Value for Mice of Vaccines Prepared from R and S Bacillus Enteritidis. W. H. Hale, New Haven, Conn.—p. 357.
Some Minor Ailments: Their Importance in the Medical Curriculum. L. P. Hamburger, Baltimore.—p. 365.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

20: 65-128 (Feb.) 1936

Cystic Retinal Detachments. H. Ridley.—p. 65.
Treatment and Complications of Chalazia. A. H. Briggs.—p. 68.
Defunct London Eye Hospitals. A. Sorsby.—p. 77.

British Journal of Physical Medicine, London

10: 165-182 (Feb.) 1936

Some Aspects of Treatment of Diabetes Mellitus. T. H. Oliver.—p. 167.
Physical Treatment of Gout. M. B. Ray.—p. 170.
Rheumatoid Arthritis. G. L. K. Pringle.—p. 173.
Diet in Winter. J. B. Alexander.—p. 175.
Inhalation Treatment: Notes on Inhalation Department at the St. John Clinic and Institute of Physical Medicine. L. Hill.—p. 177.
Rheumatism and the Wilde Bath. J. S. Ellis.—p. 179.

British Medical Journal, London

1: 195-244 (Feb. 1) 1936

Prostatectomy. A. C. Morson.—p. 195.
Treatment of Malignant Prostate. K. M. Walker.—p. 201.
*Prostatic Resection: Simplified Technic. C. D. Maitland.—p. 203.
Synthetic Magnesium Trisilicate: Its Action in Alimentary Tract. N. Mutch.—p. 205.
Alum-Precipitated Toxoid in Diphtheria Immunization. G. Chesney.—p. 208.
Immunization Against Diphtheria with Alum-Precipitated Toxoid (A. P. T.). H. J. Parish.—p. 209.

Prostatic Resection.—Maitland performed diathermic resection by the suprapubic route in ten cases, with apparently completely satisfactory results. It has been his experience that about 40 per cent of patients with prostatic obstruction are not fit to stand the shock, sepsis and loss of blood entailed in the performance of a complete prostatectomy at the time when they first come to a surgeon for advice. He has found that the use of the diathermic method of partial resection allows about half of these otherwise inoperable cases to receive the benefit of surgical relief without subjecting the patient to any unduly high risk. The greatly diminished shock, the lessened postoperative pain, the almost complete bloodlessness of this operation and the small area of damaged bladder surface are the factors that contribute to the greater safety of diathermic methods in cases presenting high surgical risk. The largest single factor contributing to the low mortality of this type of operation is the lessened element of septic absorption, evidenced by the smooth and afebrile convalescence enjoyed by the author's patients.

Edinburgh Medical Journal

43: 61-124 (Feb.) 1936

Physiology and the Surgeon. W. H. Ogilvie.—p. 61.
*Salicylates in Rheumatic Fever. R. M. Murray-Lyon.—p. 84.
Fats of Human Blood. C. P. Stewart and E. B. Hendry.—p. 99.

Salicylates in Rheumatic Fever.—Murray-Lyon reviews the records of 100 cases showing the classic symptoms of rheumatic fever on admission to the hospital. From the frequency distribution curve it is seen that 86.1 per cent of nonsalicylate cases cease to show symptoms within four weeks and that 77.4 per cent of the relapses under salicylates occur within the same period, and further that relapses are rare when the patient is taking at least 120 grains (7.8 Gm.) of salicylate a day. It might seem reasonable, therefore, to propose that all patients with rheumatic fever, except the most trivial, should be kept on at least this dosage for a month after admission to the hospital. In this way the tendency to recurrent fever should be avoided in a considerable proportion of the cases. The initial dose to be aimed at in an adult should be from 200 to 240 grains (13 to 15.6 Gm.) daily, and this amount should be kept up until toxic signs develop or until the temperature has been below 99 F. for twenty-four hours. Thereafter a reduction to 180 or 150 grains (11.7 or 9.7 Gm.) might be allowed for ten days and after that a dose of 120 grains be maintained until the end of the fourth week. It would be well to continue 60 grains (3.9 Gm.) daily until the patient is allowed out of bed, when from 30 to 45 grains (2 to 3 Gm.) of acetylsalicylic acid might be substituted for a time. The investigation has emphasized the limitations of salicylates in the treatment of

rheumatic fever and has shown that there is every justification for continuing the search for a more reliable antirheumatic agent.

Indian Medical Gazette, Calcutta

71: 1-60 (Jan.) 1936

The Feeding of Infants in India. E. H. Vere Hodge.—p. 1.
Distribution of Indian Tick Typhus: Notes on Laboratory Findings. H. E. Shortt and H. A. H. D'Silva.—p. 13.
Some Observations on Hemolysis Caused by Snake Venoms: Preliminary Note. R. N. Chopra and A. C. Roy.—p. 21.
Investigation on Effects of Evipan Sodium on Blood Sugar of Rabbit. S. Prasad and B. B. Sen.—p. 24.
*Fluorescein in Lepra Reaction. A. T. Roy and G. R. Rao.—p. 25.
Heterotopic Bone in Elephantoid Tissues. M. M. Cruickshank.—p. 28.
Composting of Town Refuse by the "Edelmist" Process. S. Rajagopal, J. G. Shrikhande and V. Subrahmanyan.—p. 30.

Fluorescein in Lepra Reaction.—Roy and Rao treated twelve well marked inmate hospital cases of fairly severe lepra reaction. Nine were given intravenous injections of 10 cc. of a 2 per cent solution of Grüblers' fluorescein (water soluble) twice a week or, in a few cases, three times in two weeks, depending on the tolerance of the patients and the response obtained, keeping a close watch on the temperature and erythrocyte sedimentation index, which was determined, as a rule, just before administering the next dose of fluorescein. The sedimentation test was done weekly, even after the temperature reached normal. The required quantity of fluorescein solution was prepared fresh each day. The remaining three cases served as controls. One was treated with intravenous injections of antimony and potassium tartrate on alternate days, 4 cc. of a 1 per cent solution in physiologic solution of sodium chloride, prepared fresh just before use, being the dose injected. The second was treated with plain physiologic solution of sodium chloride intravenously in 4 cc. doses. The third did not receive any special treatment excepting the routine hospital diet and care. The temperature of the nine cases treated tended to return to normal after from two to four injections of fluorescein, thus partially confirming the opinion of Ryrie. The same tendency of the temperature to return to normal was manifested in the control cases. This tendency can be explained by the supervention of the debility factor impairing the reacting power of the individual. To confirm this explanation the authors have compared the erythrocyte sedimentation index curve with that of the temperature curve, which clearly brings out the fact that, though the temperature comes down after two or four injections of fluorescein, the sedimentation index still remains high. A persistent high sedimentation index means prolonged debility. The toxicity of fluorescein is probably instrumental in precipitating the onset of the debility factor in human beings. Fluorescein seems to have no favorable effect on the natural resistance factor and their observations indicate that it brings down the reaction (1) by a probable antipyretic effect and/or (2) by hastening the onset of the debility factor, which, in control cases, as well as in untreated natural lepra-reaction cases, ultimately brings down the reaction. They conclude that it possesses no particular advantage over antimony and potassium tartrate or other routine methods of antireaction treatment. In cases that are particularly susceptible to antimony and potassium tartrate or do not respond to other measures, fluorescein may be used.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

43: 1-200 (Feb.) 1936

The Upper Urinary Tract in Pregnancy and Puerperium, with Especial Reference to Pyelitis of Pregnancy. D. Baird.—p. 1.
Symmetrical Cortical Necrosis of Kidneys: Importance of Clinical Diagnosis, with Account of Two Cases of Recovery Under Medical Treatment. G. F. Gibberd.—p. 60.
*Relation of Deficiency of Vitamin E to Antiproteolytic Factor Found in Serum of Aborting Women. E. Shute.—p. 74.
Trichomonas Vaginalis. J. L. Collis.—p. 87.
Specimen of Early Twin Pregnancy in Situ. E. Essen-Möller.—p. 99.
Anterior Shoulder as Guide to Engagement of Head and to Progress of Labor. N. A. Purandare.—p. 101.
Large Vesical Calculus and Pregnancy. J. W. Bride.—p. 105.
Adenomatous Polyp of Unusual Type Occurring in Body of Uterus. K. Bowes and J. Bamforth.—p. 109.
Is the Uterus a Gland with Internal Secretion? E. W. Winter.—p. 113.

Vitamin E and Antiproteolytic Factor in Serum of Aborting Women.—The experiments of Shute show that rats on a diet deficient only in vitamin E content develop a reaction of the blood serum to tryptic ferment similar to that found in the blood serum of many cases of human spontaneous abortion. This reaction in the blood of rats developed at about the time when breeding tests indicated that the animals had been rendered relatively or absolutely free of the E vitamin. There was one exception to this in six female rats. This property of the blood serum disappeared from it when wheat germ oil was fed to the animal in considerable quantities before it was killed. Rats fed on a normal diet did not show this antiproteolytic power except in one instance: that of a young rat raised exclusively, and during the late winter months, on a bread and milk diet. The experiments indicate that litter mates on the same diet free from vitamin E develop E avitaminosis at unequal periods of time after the diet has been begun. Both the breeding and chemical tests demonstrate this fact. Vogt-Möller has noticed this also. There may be a difference of as much as three months in the development of evidences of vitamin E-freeness in animals exactly resembling one another, without any gross variations in the amount of body fat, and fed from the same diet dish. A few cases are presented to illustrate that preparations of vitamin E administered orally to women whose blood serums are resistant to tryptic proteolysis rapidly restore such serums to normal. The return of the blood to normal digestibility usually coincides with the subsidence of clinical signs of impending interruption of pregnancy. The author believes that vitamin E is another of the factors in the body holding estrogenic substance in equilibrium during normal pregnancy. Vitamin E will remove temporarily the antiproteolytic factor present in certain types of blood serum. It should be administered until the antiproteolytic factor has disappeared and then should be continued with such a dosage as will keep the serum normally digestible. In the average case it takes 6 drachms (24 Gm.) of a preparation of vitamin E given in a single dose to render the blood serum digestible in twenty-four hours; then 1 drachm (4 Gm.) each day will maintain it in the same condition.

Journal of Tropical Medicine and Hygiene, London

39: 25-40 (Feb. 1) 1936

Blood Grouping of Aborigines of Musgrave Ranges in the Northwest of South Australia. J. B. Cleland, C. Hackett and T. H. Johnston.—p. 25.
Recent Research in Treatment of Bilharzia Disease. F. G. Cawston.—p. 28.

Lancet, London

1: 239-294 (Feb. 1) 1936

Surgery of Corneal Grafts with Late Reports. B. W. Rycroft.—p. 239.
Effect of Sex Hormones on Prostate of Monkeys. S. Zuckerman and A. S. Parkes.—p. 242.
*Experimental Production by Estrin of Pituitary Tumors with Hypopituitarism and of Mammary Cancer. W. Cramer and E. S. Horning.—p. 247.
Kümmell's Disease. J. P. Hosford.—p. 249.
Use of Lipiodol in Surgery of Biliary Passages. J. C. Ross.—p. 251.

Experimental Production of Pituitary Tumors.—Cramer and Horning subjected mice to the prolonged influence of estrogenic substance administered by painting the skin twice weekly with a 0.01 per cent solution of the substance in chloroform. The material was applied to male and female mice, both normal and castrated. A mixed strain with a low incidence of spontaneous mammary tumors and a specially inbred strain with a high incidence (about 70 per cent) of spontaneous mammary tumors were used. The five male mice of the high cancer strain which had been subjected to the treatment for a sufficiently long period developed mammary cancer, two of them with tumors in both right and left axillae. The first tumor appeared after sixteen weeks, the last after twenty-one weeks of painting with the estrogenic substance. One of the tumors had a metastasis in the lung. Another tumor has been transplanted through three generations so far. A sixth tumor was found in a castrated male mouse of this strain which had been painted for nineteen weeks. An apparently paradoxical result is that none of the females of this strain developed a tumor after being painted for more than six months, although tumors appear in from 60 to 70 per cent of untreated females of this strain when they are more than 6 months old. Of the mixed strain, neither the males nor the females have so far developed a tumor. The results confirm the observations of Lacassagne, who first demonstrated the appearance of mam-

mary carcinoma in male mice by injections of estrogenic substance. On the basis of their results the authors emphasize the following conclusions as being of general significance: 1. Estrogenic substance is absorbed by the unbroken skin without producing in it any carcinogenic effect. 2. Unlike the other carcinogenic substances so far studied experimentally, the carcinogenic effect of estrogenic compound is restricted to a tissue remote from the site of application of the carcinogenic agent but possessing a specific physiologic sensitiveness to it. Its action resembles that of the other carcinogenic agents in producing first a hyperplasia of the tissue in which the cancer develops subsequently—the precancerous condition—and in the long period of time necessary to induce cancer. 3. The striking difference between the carcinogenic response to the compound of male mice belonging to two different strains demonstrates clearly the importance of the factor "susceptibility," which in this case is genetic in origin, in the etiology of cancer. The fact that cancer develops in a site in which it never appears spontaneously demonstrates equally clearly the importance of the extrinsic carcinogenic factor, in this case estrogenic compound. 4. The sensitiveness of the male mamma in its carcinogenic response to the material, contrasted with the great insensitiveness of the female mamma in animals of a pure strain in which the female mamma develops cancer spontaneously in a very high percentage, suggests that either the female organism is able to destroy effectively the excess of the compound administered experimentally or that the carcinogenic response of the mammary epithelium depends on an indirect and not on a direct interaction between the substance and the cells.

Medical Journal of Australia, Sydney

1: 109-152 (Jan. 25) 1936

Remarks on Choice of Medicine as Profession, Progress of Medicine and Some of the Methods by Which the Present Position Has Been Attained. E. Bramwell.—p. 109.
Clinical Recognition of Arrhythmias and Their Treatment. M. D. Silberberg.—p. 115.
*Observations on Cardiac Dyspnea. K. Maddox.—p. 122.
Rôle of Royal Australasian College of Surgeons in Postgraduate Education. A. Newton.—p. 129.

Observations on Cardiac Dyspnea.—Maddox designates dyspnea as proportional to the ratio of ventilation to vital capacity rather than to either function alone. Dyspnea as a physiologic phenomenon is to be judged not by the amount of distress which it causes but by the degree of physical effort which brings it into being. The physiologic analysis would appear to be made up as follows: 1. There exists a primary diminution of vital capacity from pulmonary congestion. Reflex dyspnea at rest may result from this cause alone. 2. On muscular exertion there is an immediate reflex increase in the rate and depth of respiration arising from impulses from the working muscles and, later, from the great veins close to the heart. After exercise, dyspnea goes earlier in the normal subject because the venous pressure factor does not persist as it does for a time in the cardiac patient. 3. The increased ventilation exceeds the threshold of dyspnea because of the existence of an already reduced vital capacity. Chemical change then plays little part in mild exertion but may do so in severe exertion. Orthopnea is an important prognostic guide. Orthopnea results in a shift of the blood from the abdomen to the chest, causing an increase of output of the right ventricle for a few seconds. It increases pulmonary congestion, decreases vital capacity and stimulates the vagi to produce a raised ventilation. The threshold of dyspnea is crossed and the patient sits up, after which reverse phenomena occur. At a later stage of failure even sitting up fails to relieve the distressing and constant tachypnea. Cardiac asthma is a complex problem. At one extreme are patients with advanced failure of the left ventricle with distended and rigid lungs in which the lung blood depots are full to the utmost and in which the balance is readily tipped in the direction of another attack, and at the other extreme are patients with a minor grade of failure but whose irritable nervous system allows of sudden coronary spasm, together with a spontaneous extra load on the left ventricle from general vasoconstriction. Cardiac asthma is always serious—forty sufferers out of eighty-seven were dead within twelve months. Primary overbreathing and the onset of sleep seem to be sufficient to initiate Cheyne-Stokes respiration in cardiac disease. The overventilation performs this by diminution in the carbon dioxide tension of the arterial blood, resulting in apnea. In an age of medicine forever striving for earlier diagnosis, the cardiologist is at a disadvantage. Dyspnea, the earliest symptom of heart disease, in its milder forms, is tolerated by the patient, who contents himself with the philosophy of increasing years. When the physician is consulted, the cardiac reserve is already low. His is the difficult task of assessing what remains, steering a course between pessimism and overoptimism and detecting or avoiding the addition of the fearful cloak of neurotic anxiety.

Quarterly Journal of Medicine, Oxford

5: 1-140 (Jan.) 1936

Erythrocyte Sedimentation Rate in Diseases of Heart. P. Wood.—p. 1.
Observations on Treatment of Myasthenia Gravis. A. M. Cooke and R. Passmore.—p. 21.
*Glycogen Disease (von Gierke's Disease; Hepato(nephro)megalia Glycogenica). R. W. B. Ellis and W. W. Payne.—p. 31.
*Muscular Degeneration Occurring in Late Adult Life, with Review of Recorded Cases of Late Progressive Muscular Dystrophy (Late Progressive Myopathy): Two Cases. S. Nevin.—p. 51.
Achrestic Anemia. M. C. G. Israëls and J. F. Wilkinson.—p. 69.
Leukocytosis in Typed Lobar Pneumonia: Serum Treated Cases. J. Fleming.—p. 105.
Gargoylism (Chondro-Osteodystrophy, Corneal Opacities, Hepatosplenomegaly and Mental Deficiency). R. W. B. Ellis, W. Sheldon and N. B. Capon.—p. 119.

Glycogen Disease.—Ellis and Payne report five cases of glycogen disease. Although no case has actually been diagnosed at birth, there is every indication that the condition is congenital. The condition may occur as an apparently isolated phenomenon or may affect two or more siblings. There is no established case of direct transmission from an affected parent. In the majority of case reports no information is given as to the presence or absence of consanguinity of the parents. Although the total number of cases is still small, the incidence of two marriages of first cousins and one marriage of second cousins among the parents of less than twenty-five family groups is significantly higher than that in the general population. This incidence of parental consanguinity at least suggests that the condition may be inherited as a mendelian recessive character. In general, the children affected with glycogen disease appear to have a low resistance to infections of all kinds, death in von Gierke's original cases and in several others being due to pneumonia or influenza. In patients in whom the condition persists over a sufficiently long period, some degree of retardation of growth and development is frequent. This becomes more obvious as the children grow older and is seldom noticed before the age of 3 or 4 years. The organs in which the greatest accumulations of glycogen occur show a generalized enlargement, which may be of extreme degree. The liver is most constantly involved, whereas the spleen has never been found to be affected. Enlargement of the kidneys, heart and pylorus has occurred in certain cases. The enlargement of the liver alone appears to give rise to no symptoms except extreme prominence of the abdomen, which brings the patients under observation. Patients in whom enlargement of the kidneys has been described do not appear to have suffered from renal symptoms. Several examples of hypertrophy of the heart due to glycogen retention have been reported, and here the condition may give rise to cyanosis and symptoms of cardiac failure. Obesity has been noted in several instances, and the distribution of fat has suggested that seen in adiposogenital dystrophy. The absence of jaundice and of bile in the urine and the fact that the van den Bergh reaction is normal have been emphasized in the differential diagnosis of the condition, and cases of hepatic infantilism reported by Exchaquet have been excluded from studies of glycogen disease on this account. Transient jaundice, however, corresponding with the clinical picture of an attack of catarrhal jaundice, is liable to occur in the course of the disease. Vomiting, hirsuties and pigmentation have been observed in several cases. The authors summarize the biochemical observations in glycogen disease as follows: (1) the habitual presence of acetone bodies in the urine, generally in the morning, though not necessarily throughout the day; (2) a low fasting blood sugar; (3) a raised blood glycogen; (4) failure of the blood sugar to rise normally (i. e., over 30 mg. in from fifteen to thirty minutes) following the injection of epinephrine; (5) a

delayed fall, or other abnormality of the blood sugar curve, following the dextrose test meal; (6) a rise, in some cases, of the blood sugar in the half hour following ingestion of levulose, and (7) a raised blood cholesterol. These criteria are not to be regarded separately as diagnostic, and in fact several may coexist in other conditions; when all are present in the same patient, however, and are associated with the clinical features, they form a syndrome sufficiently characteristic to justify the diagnosis of glycogen disease. The etiology of the disease cannot be regarded as established, but the existing evidence points to defect of the glycogen-splitting ferment and is at least consistent with anterior pituitary dysfunction.

Muscular Degeneration in Late Adult Life.—Nevin points out that primary degeneration of the voluntary muscles in late adult life is not a common disease. The most likely cause of such a condition, especially if it is chronic, is progressive muscular dystrophy. In his two cases microscopic examination of affected muscle obtained at biopsy showed pathologic changes differing at least in degree from those characteristic of progressive muscular dystrophy. In these cases, in different parts of the muscle, there were found local degeneration and complete breaking down of the muscle fibers, which was strikingly different from the usual changes in the fibers in progressive muscular dystrophy. The usual changes recognized as characteristic of the pathology of this condition are hypertrophy of some fibers with atrophy of others, proliferation of sarcolemmal nuclei, increase of fibrous tissue and fat and, occasionally, small celled infiltration round the small vessels. The degeneration of the fibers is shown only by gradual atrophy and proliferation of sarcolemmal nuclei inside the sarcolemmal sheath. Alterations in transverse or longitudinal striation sometimes occur, swellings may occur on the fiber, and hyaline or granular degeneration may take place. The main changes in the cases described are strikingly different in that the degeneration of the muscle fiber has taken place not by gradual atrophy of the fiber but by an intense degeneration in which the muscle fibers have broken down, the sarcolemmal sheaths have disappeared and the débris of the degenerating muscle and proliferated sarcolemmal nuclei have called forth an apparent phagocytic reaction. The present cases also differed in the absence of any hypertrophy of the muscles and the absence of involvement of the facial muscles. The author believes that separation of his two cases seems warranted by the present knowledge of the subject. This is not a final statement, as detailed pathologic study of the cases might show a pathologic correspondence between these cases and other cases of late progressive muscular dystrophy. At any rate it seems clear that in progressive muscular dystrophy further study is required of the method of degeneration of the muscle fibers, especially in cases of late onset.

South African Medical Journal, Cape Town

10: 37-82 (Jan. 25) 1936

John Graunt: The Father of Vital Statistics. H. S. Gear.—p. 39.
Corneal Transplantation. E. A. Seale.—p. 41.
*"Knoppie-Spider" Bite. M. H. Finlayson.—p. 43.
Agglutination and Complement Fixation Tests in Diagnosis of Group of Typhoid Fever Cases. W. Lewin.—p. 45.

Spider Bite.—Finlayson calls attention to the fact that specimens of "knoppie-spider" obtained from the Piquetberg, Malmesbury, Graafwater and Caledon areas have been observed to belong to the genus Latrodectus. The symptoms following bites by "knoppie-spider" may vary in different individuals, but in almost all cases severe cramplike pain is experienced in the chest or abdomen. Frequently abdominal rigidity is observed, and in the majority of cases profuse perspiration is noted and salivation may be marked. The temperature may be subnormal, but it rapidly rises to 102 or 103 F. The reflexes are overactive and the patient is often cyanosed. In some cases nausea and vomiting are present, in others difficulty in breathing. Death may ensue from heart failure or respiratory failure. The symptoms are neurotoxic in man and animals and in this respect resemble those produced by Cape cobra venom. In the absence of a specific antiserum the treatment must be the same as for snake bite. The treatment of spider bite advocated by Ingram and Musgrave is given. The use of tetanus antitoxin should be considered in all cases.

Paris Médical

1: 117-132 (Feb. 8) 1936

Proteinemia of Hypertension. G. Carrière, C. Huriez and M. Leperre.—p. 117.
*Hypocalcemia and Loss of Consciousness of Indetermined Origin. F. Kayser and H.-P. Klotz.—p. 124.
Biologic Reactions for Diagnosis of Pregnancy. G. Serdaris.—p. 128.

Hypocalcemia and Loss of Consciousness.—Kayser and Klotz report several observations of sudden loss of consciousness of undetermined origin. They decided to measure the blood calcemia in all such cases and finally obtained records in eleven patients. In all the patients studied there was a hypocalcemia of varying degree, with a normal range of between 95 and 105 mg. of calcium per liter of serum. The observations on the patients gave a variation of from 78 to 93. Furthermore, a state of extreme emotion and a tendency to breathlessness usually preceded the loss of consciousness. The actual syncope probably has a cardiac origin. The constant accompanying hypocalcemia suggests the treatment with a recalcifying medication, such as calcium chloride, vitamin D, parathyroid extract or ultraviolet radiation. The pathogenesis is uncertain, but it may be that the manifestations of syncope are dependent on a sudden disorder of the vagosympathetic system of humoral origin.

Presse Médicale, Paris

44: 225-248 (Feb. 8) 1936

Oncotic Pressure of Serum. G. Carrière, C. Huriez and M. Leperre.—p. 225.
*Treatment of Sydenham's Chorea by Intramuscular Injections of Magnesium Sulfate. M. R. Contreras.—p. 228.
Uricemia. F. Coste and A. Grigaut.—p. 229.

Treatment of Chorea.—Contreras believes that the best way of introducing magnesium sulfate is intramuscularly. The preparation which he uses in the treatment of chorea is made as follows: A 25 per cent solution of magnesium sulfate in distilled water is divided into 5 and 10 cc. ampules and sterilized in the autoclave. The injection is given every other day with 5 cc. for the patients aged from 1 to 5 and 10 cc. for older children. The injection is made deep into the gluteal region and is followed by a long massage. Since his original communication the author has observed that the rapidity of recovery is not closely related to the quantity of the medicine or the frequency of injection. In the majority of cases of chorea a quieting of the involuntary movements is observed between the second and fifth injections. The psychic disorders, especially irritability, are also improved. After the first five injections the patient gradually returns to a normal state, and as a rule recovery is obtained with ten ampules. No complications other than pain at the site of injection have been observed, except for a slight tendency to sleepiness in one case. The mechanism of action is uncertain. The author does not believe that the cure is accomplished only by the hypnotic action of magnesium sulfate. He feels that the method described is the most rapid and certain for the cure of chorea.

Policlinico, Rome

43: 427-478 (March 9) 1936. Practical Section

*Toxicity of Stagnant Gastric Content After Gastric Resection and Its Relation to Postoperative Hyperazotemia and Hypochloridemia. C. Antonucci.—p. 427.
Amebic Abscess of Liver: Cases. S. Marino.—p. 434.

Toxicity of Stagnant Gastric Content After Gastric Resection.—Antonucci states that the grave syndrome of hyperazotemia and hypochloridemia which follows gastric resection in gastric or duodenal ulcers and which, without any other complications, may result fatally is due to alterations of the liver and kidney originating in the absorption of stagnant toxic gastric content by the intestine. The gastric content, a mixture of gastric and duodenal secretions, blood and waste material (particles of necrotic gastric and intestinal mucosae), is secreted and accumulates rapidly after resection, regardless of the technic used, and is highly toxic. Intravenous injections of filtrates of the gastric content, from 2 to 8 cc., in rabbits resulted in death of the animals within one minute to forty-eight hours after the injection. In all the animals there was a marked increase of azotemia and a moderate diminution of chloridemia. The paren-

chyma of the liver and the kidney were congested and greatly injured. The author believes that the results of his experiments support his opinion on the etiopathogenic rôle assumed by stagnation and intestinal absorption of toxic gastric secretions in the development and evolution of the grave humoral syndrome that follows gastric resection. He points out the advisability of performing aspirations of the gastric content six hours after gastric resection and then once or twice more the next day, a practice which he carries out systematically in all his cases with satisfactory results. His advice is based on the experience of more than 300 gastric resections in gastric or duodenal ulcers.

Semana Médica, Buenos Aires

43: 881-960 (March 19) 1936. Partial Index

*Cystic Degeneration of Internal Meniscus of Knee Joint. Sara Satanowsky.—p. 881.
Sedimentation of Erythrocytes in Ancylostomiasis by Necator Americanus. J. Bacigalupo and G. A. Loretti.—p. 894.
Uncontrollable Vomiting in Pregnancy: Treatment. J. Bazán and R. Dubrovsky.—p. 901.
Primary Cancer of Choledochus. J. A. Pángaro.—p. 908.
Treatment of Arterial Hypertension by Roentgen Stimulation of Carotid Sinus. A. Casiello.—p. 931.
Latent Bilateral Hydronephrosis in Hypertension. C. V. Zerbini and A. J. Ghibaudi.—p. 951.

Cystic Degeneration of Internal Meniscus of Knee Joint.—Satanowsky says that direct trauma of a meniscus is the necessary condition for the development of meniscal cystic degeneration of the knee joint. It is followed by degeneration of the fibrocartilage and of the connective tissue and then by secondary vascular and synovial alterations around the meniscus. The process of degeneration follows a prolonged silent evolution until the appearance of the tumor. The latter develops for a certain time and then enters a stationary stage. The fact that the external meniscus is more exposed to direct trauma than the internal one is the reason why the former is more frequently the seat of cystic degeneration than the latter. The author's patient, aged 18, suffered at the age of 12 a penetrating wound of the internal aspect of the knee joint, which was followed by transient tumefaction and pain. Six years later a painful tumor developed at the same spot; the pain increased by walking and disappeared at rest. With clinical and roentgen diagnosis of mucous cyst of the internal meniscus, a meniscectomy by Tavernier's technic was performed. The lesions of degeneration were found to be superimposed over the traumatized spot and a longitudinal rupture of the meniscus, caused by the wound, proved to be present at examination of the removed meniscus. The patient regained complete extension and flexion of the knee joint fifty days after performance of the operation. The author says that partial excision of the meniscus at the level of the cyst fails to give satisfactory results, because cystic degeneration reappears some time after performance of partial operations.

Archiv für klinische Chirurgie, Berlin

184: 549-760 (March 18) 1936. Partial Index

Contribution to Metabolism of Lipoids in Mechanical Ileus. W. Brunner.—p. 549.
Urinary Lithiasis. H. Angerer.—p. 558.
Incarceration of Entire Small Intestine in Foramen of Treitz as Unusual Cause of Acute Hemorrhagic Pancreatitis. H. von Winterfeld.—p. 615.
Site of Amputation in Diabetic Gangrene. M. Mátyás.—p. 624.
*Nonspecific Protein Reaction After Blood Transfusion. A. Filatov, N. Blinov and M. Doepp.—p. 647.
*Postoperative Blood Picture in Total Removal of Stomach: Three Cases. S. Tateno.—p. 681.

Nonspecific Protein Reaction of Blood Transfusion.—According to Filatov and his co-workers, the following factors must be taken into account in considering the frequency of nonspecific protein reaction after blood transfusion: the care with which observations are made on patients following blood transfusion; the nature of the disease for which the transfusion is undertaken and the question whether the transfusion was performed for the first time. Biologic causes, such as the ingestion of a meal by the donor before the transfusion, the relationship of titers of serums and of erythrocytes of the donor and the recipient, the presence of albumin fractions in the blood or the use of a universal donor do not play an important part in the causation of the nonspecific protein reaction. Disregarding the subgroups A_1 and A_2 results in doubling the number of reactions. The reaction, however, need not take place in every instance in which blood from an improper subgroup was infused. On the other hand, technical errors play a much more important part in the causation of the reaction. The incidence of such reactions may be materially reduced by observing the following precautions: (1) careful cleansing of the apparatus for blood transfusion, (2) prevention of any blood clotting, (3) observance of painstaking asepsis, (4) maintaining proper temperature of the blood to be transfused and (5), what is most important, using distilled water free from any impurity for the solution of chemicals. The authors were able to reduce the incidence of reactions in their last group of 200 blood transfusions to 2 per cent by adhering to these precautions.

Total Resection of the Stomach.—Tateno reports three cases of cancer of the stomach in which total gastrectomy was performed and the esophagus was anastomosed to the jejunum. Liver metastases were the cause of death in the first case 135 days after operation, while the second and the third patients died 182 and 193 days after the operation from general weakness and anemia. The author found colon bacilli in the jejunum in small numbers; however, their pathogenicity and their relation to the anemia remained obscure. Necropsies revealed that generalized chronic intoxication was the cause of death in the three cases. Systematic examination of the blood demonstrated a diminution in the erythrocytes, hemoglobin content, thrombocytes and reticulocytes. The color index rose. There were no alterations in the red cells characteristic of the pernicious anemia. The anemia observed presented a peculiar blood picture, which the author characterizes as agastric hypoplastic hyperchromic anemia.

Deutsches Archiv für klinische Medizin, Berlin

178: 453-588 (March 9) 1936. Partial Index

*Symptomatic Erythrocytosis. H. Otto.—p. 453.
Studies on Problem of Heredity of Diabetes Mellitus. F. Steiner.—p. 497.
*Studies on Oxalic Acid Elimination Particularly in Patients Having Nephrolithiasis. W. Herkel and K. Koch.—p. 511.
Observations on Pathogenesis of Acute Myeloblastic Leukemia. N. Henning.—p. 538.
Excretion and Absorption of Water by Skin. W. Burr.—p. 550.
Reducing Substances in Gastric Juice. G. Krause.—p. 555.

Symptomatic Erythrocytosis.—Otto shows that the exact definition of the term erythrocytosis and the quantitative interpretation of the terms polyglobulism, hyperglobulism and erythrocytosis require a purely numerical differentiation. Erythrocyte values between 5 and 5.5 million he designates as erythrocytosis, values between 5.6 and 6.5 million as hyperglobulism and those in excess of 6.5 million as polyglobulism. To define the lower limits of erythrocytosis the author made studies on normal men and women and found that in men the sphere of erythrocytosis begins with values of more than 4.8 million and in women with values of more than 4.61 million. He reports his observations on erythrocytosis in 242 patients observed in his clinic in the last eighteen months. According to the assumed cause of the erythrocytosis, he differentiates eleven groups of cases. One group includes patients with intoxications from various types of gases (carbon monoxide, hydrogen sulfide) and mild cases of lead poisoning. He thinks that in this group of patients the formation of blood toxins, such as methemoglobin, sulfmethemoglobin and carbon monoxide methemoglobin, results in an irritation of the bone marrow and thus in erythrocytosis. In another group, who had disorders accompanied by hemorrhages of the gastro-intestinal tract and of the kidney (gastric and duodenal ulcers, various types of nephritis, nephrolithiasis, cystitis), the erythrocytosis is probably caused by irritating hemorrhages. Small quantities of blood that are lost daily stimulate the bone marrow, which responds to this stimulus with an increased formation and flooding out of erythrocytes. In the erythrocytosis in disturbances of the hepatic and biliary system, he says that the indirect formation of bilirubin probably constitutes the stimulus for the increased hematopoiesis. The erythrocytosis of diabetic patients is ascribed to the acidotic condition of the metabolism. The erythrocytosis that develops in hyperthyroidism and thyrotoxicosis results from stimulation of the bone marrow by thyroid substances indirectly by way of the sympathetic nervous

system. The author mentions the erythrocytosis that develops in the physiologic fluctuation of the internal secretions (puberty, menstruation, pregnancy and the menopause) as well as in pathologic conditions of the endocrine system. He discusses various possibilities by which abnormalities in the endocrine system may irritate the bone marrow and thus produce erythrocytosis. Other patients in whom erythrocytosis develops are those with a decreased oxygen intake; that is, patients with pulmonary and circulatory disorders. In these patients the increase in the erythrocytes is a compensatory mechanism. In vascular disturbances there frequently appears a relative erythrocytosis in which the bone marrow is not involved but in which a contraction of the vessels, a forcing out of the plasma and also a contraction of the spleen are concerned. It is probable that the erythrocytosis of diseases of the brain and of the spinal cord is the result of a vascular paralysis. However, the erythrocytosis developing in patients with neoplasms is probably the result of an irritation of the bone marrow. Infectious diseases also may irritate the bone marrow and thus elicit an erythrocytosis. The duration of erythrocytosis differs considerably.

Oxalic Acid Elimination in Nephrolithiasis. — Herkel and Koch describe a method for the determination of oxalic acid in the urine and present their observations on the oxalic acid elimination in the urine of rabbits after various diets and tolerance tests and also after the intramuscular injection of oxalic acid, glyoxal or glycolic acid. They found that the oxalic acid elimination fluctuates from day to day in normal persons but that the average value is eliminated, even if the diet is free from oxalic acid and is of low caloric value, because oxalic acid originates chiefly in the intermediate metabolism. Low values were found in diabetes and achylia, but the values were increased in hepatic impairment and in glomerular nephritis, as was the case also in some cases of nephrolithiasis. It could not be proved that the hydrogen ion concentration exerts an influence. In tolerance tests with diets that were deficient in oxalic acid and had a standard protein content but varied in carbohydrate content, it could be proved that in many cases the oxalic acid elimination follows the carbohydrate content of the diet, and so it is assumed that relations exist between oxalic acid and the carbohydrate metabolism. Aminoacetic acid and meat exerted no influence. Oxalic acid tolerance tests, in the form of spinach meals, resulted in an increased elimination of oxalic acid in healthy persons. After citing tests made to determine the effect of calcium, atropine, hydrochloric acid, histamine and posterior pituitary extract on oxalic acid elimination, the authors state that patients with achylia react to spinach tolerance tests little or not at all. In one case of impairment of the hepatic parenchyma the oxalic acid was increased, owing to a disturbance in the oxidation by the liver. In other cases of hepatic cirrhosis the elimination was normal. The authors made spinach tolerance tests also on twenty-one patients with renal calculi, among whom were a number with an unstable sympathetic nervous system. Eight of these patients showed a normal response, but the others reacted abnormally, which indicates that there are disturbances in the oxalic acid elimination of many patients with renal calculi. However, the cause for this disturbance is probably not in the kidney but rather in a disordered relationship between substance metabolism, the sympathetic nervous system and hormones.

Deutsche medizinische Wochenschrift, Leipzig

62: 409-452 (March 13) 1936. Partial Index

Relations of Medical Practice to Balneotherapy and Climatotherapy. H. Vogt.—p. 409.
*Experiences with Subaqueous Exercises in Paralyzed Patients. H.-G. Scholtz.—p. 417.
Arrangement and Method of Subaqueous Exercise Treatment at Warm Springs (Georgia U. S. A.). P. Haertl.—p. 419.
Thoughts on Psychotherapy in Spas. H. Seng.—p. 429.
Dietetic Regulation in Spas. L. Roemheld.—p. 431.

Subaqueous Exercises in Paralyzed Patients.—Scholtz asserts that movement is the most intense stimulus for the impaired nerve cell and that exercises are important in the treatment of paralytic conditions. Subaqueous exercises make possible movements of the paralyzed extremity that are not possible out of the water. Owing to the bouyancy, which nearly cancels the weight of the body, relatively weak impulses result in movements. The first aim of the subaqueous exercises is to give the paralyzed patient again the feeling for movement and innervation and also to revive the will to movement. Another advantage is that the bath in the tank permits movements in all direction and does away with friction, particularly in lateral movements. Moreover, the bath exerts stimulating as well as quieting influences on the nervous system. In warm baths the quieting influence predominates. The author points out that the subaqueous exercise treatment, although formerly recommended by von Leyden, Goldscheider and others, has recently been given a great impetus by the work done at Warm Springs, Ga. He reports his own experiences with the treatment in approximately fifty cases. He gives the treatments in a tank in which there is a massage table as well as a rest bench. First passive movements are made, but the patient is urged to help with his own efforts. Occasionally, subaqueous massage is applied by means of the subaqueous douche. This douche has a temperature of 45 C. (113 F.) and is under a pressure of 2.5 atmospheres. The latter measure improves the nutrition of the paretic muscles and also eases the spastic contractures. In the beginning, the exercises should be carefully supervised and care should be taken that all the paralyzed muscle groups are given some exercise. The patients should remain in the tank for from thirty to sixty minutes. The author obtained favorable results with this treatment in cases of multiple sclerosis, in spastic paresis caused by vertebral injuries and in cases of paralysis caused by polyneuritis and poliomyelitis.

Klinische Wochenschrift, Berlin

15: 361-400 (March 14) 1936. Partial Index

*Significance of Determination of Rest Nitrogen and of Renal Impairment in Malignant Diphtheria. H. Brugsch and G. Fülling.—p. 366.
Vitamin C Therapy in Profuse Genital Hemorrhages Resulting from Essential Thrombopenia. H. O. Neumann.—p. 368.
Influence of Pregnancy Urine and of Gonadotropic Substance on Thymus of Guinea-Pigs. F. Klein.—p. 371.
*Decomposition of Urea as Differentiating Characteristic Between Diphtheria and Pseudodiphtheria Bacilli. Johanna Püschel.—p. 375.
Value of Weltmann's Reaction in Rheumatology. H. Hennes and A. Kemen.—p. 378.
Selective Heat Action of Short Waves in Finely Dispersed Mixtures. H. Weisz.—p. 384.

Renal Impairment in Malignant Diphtheria.—Brugsch and Fülling show that a renal impairment, recognizable by the appearance of hyaline or granulated cylinders, is found in the majority of patients with diphtheria. With increasing severity of the diphtheria erythrocytes, a large number of casts, leukocytes and epithelia appear in the urine. However, the urinary sediment alone is no sure sign of the severity of the disorder, for the course of the disease may be mild in spite of considerable involvement of the kidneys. The authors examined the blood, particularly for its rest nitrogen content, and found that an increase in the rest nitrogen makes the prognosis of malignant diphtheria rather unfavorable, whereas a reduction of a formerly increased value is a favorable indication. They cite two cases which demonstrate, on the one hand, the contradiction between the clinical picture and the rest nitrogen content and, on the other, the prognostic significance of the rest nitrogen curve. The cause of the increase in the rest nitrogen content is not quite clear as yet; nevertheless, the continuous determination of the rest nitrogen is a method that permits prognostic conclusions, independent of the sometimes misleading clinical manifestations and of the urinary sediment.

Urea and the Differentiation of Diphtheria Bacilli.—Püschel reports that, in an attempt to improve the culture medium for diphtheria bacilli by the addition of urea, it was found that the diphtheria bacilli grew luxuriantly on this medium whereas the growth of the pseudodiphtheria bacilli was greatly inhibited and the plates had a distinct ammonia odor, that is, the pseudodiphtheria bacilli apparently were able to decompose urea. Subsequently a large number of tests showed that the diphtheria strains did not decompose urea, while the pseudodiphtheria bacilli did. The author points out that studies of other investigators have proved that the capacity to decompose urea is due to the presence of urease in the bacteria. It is said that this ferment is more frequent in the bacteria occurring in air, water and soil than in the bacteria that play a part in medicine. Examinations of a large number of patho-

genic strains convinced the author that the presence of urease is a rare biologic characteristic. Since the pseudodiphtheria bacilli have this rare quality, she suggests that the so-called pseudodiphtheria bacilli should be excluded from the group of diphtheria-like rods and should be designated Corynebacterium ureaticum. She points out that the capacity to decompose urea is of diagnostic significance, since the demonstration of this characteristic in organisms suggestive of diphtheria rods excludes the diagnosis of diphtheria. Moreover, she thinks that this capacity of the pseudodiphtheria bacilli contradicts not only their identity but even their close relationship with diphtheria bacilli. She stresses that mutation between the two should be recognized only if the bacteria bacilli have actually become capable of splitting urea.

Medizinische Klinik, Berlin

32: 341-372 (March 13) 1936. Partial Index

*Articular Lesions Resulting from Working with Compressed Air Tools and from Other Hard Physical Work. P. Rostock.—p. 341.
Treatment of Hemangioma. H. Aretz.—p. 343.
Treatment of Retinitis Pigmentosa. G. Guist and F. Seidel.—p. 350.
Hemiatrophia Faciei and Totalis. H. E. Meyer.—p. 353.
Recognition of Type and Cause in Transport Anomalies in Digestive Tract. W. Kaufmann.—p. 354.
*Influence of Smoking on Threshold of Stimulus for Sense of Pressure. A. Wenusch and R. Schöller.—p. 356.

Articular Lesions Resulting from Work with Pneumatic Tools.—In workers who use pneumatic tools, Rostock found that the lesions developing are of two types: 1. Because the musculature is tense to absorb the shocks from the pneumatic tools, traction on the muscles and tendons is increased and reactive bone proliferations develop at the sites of insertion. These proliferations are usually visible in the roentgenogram. 2. The continuous jerks press the articular surfaces against one another and this chronic trauma elicits subchondral necroses, which become manifest in typical osteochondritis dissecans and changes in the shape of the articular surfaces. On the elbow, considerable bone proliferations are observable at the site of insertion of the triceps musculature at the olecranon. The head of the radius likewise shows changes, but the most typical form of articular lesion is the bone proliferation at the site of insertion of the brachial muscle. The author illustrates this change in two roentgenograms. Then there may be lesions on the articular surfaces, and movable bodies may develop in the joints. Changes may develop in the wrist and shoulder joints, although they are usually not as pronounced as those of the elbow. The author points out that articular changes of this nature, although they are most frequent in miners and others who use pneumatic tools, nevertheless occur also in other persons who do hard physical work, such as quarry workers, engine stokers, drivers of heavy trucks, workers on chill-molds, blacksmiths, washerwomen and operators in shoe factories.

Influence of Smoking on the Pressure Stimulus.—Wenusch and Schöller studied the changes in the threshold values for the pressure stimulus by experiments with hairs and pendulums. They found that the smoking of tobacco more or less heightens the threshold stimulus for the perception of pressure but that this change soon subsides. The increase is largely dependent on the habituation to tobacco, for the heightening of the threshold of the pressure stimulus is much more pronounced in persons not accustomed to smoking than in habitual smokers, in whom there may be no increase at all. The authors point out that the temporary increase in the threshold of the stimulus amounts to a partial exclusion of the person from the environment, and they think that this might explain why smoking is so often done during excitement.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

101: 313-372 (March) 1936

Treatment of Ovarian Insufficiency and Its Sequels. H. Wimhöfer and G. Pissarczyk.—p. 313.
Rare Forms of Secondary Gynatresias and of Strictures of Genital Passages. F. Kovács.—p. 318.
*New Method of Treatment of Endocervicitis and Erosions of Cervix by Means of Intracervical Injection of Ammonia Silver Salt Solutions. L. S. Kritschewsky and E. Werbatus.—p. 346.

Treatment of Endocervicitis.—Kritschewsky and Werbatus employ ammonia silver salt solutions in the treatment of endocervicitis and in cervical erosions. They use a 1:20,000 solution in boiled water. Following a preliminary vaginal douche with 1 liter of this solution, the vaginal portion of the cervix is brought down and the external os is wiped with sterile gauze. Then a long needle is introduced into the submucous tissue of the cervix and the tissues are infiltrated with 10 cc. of the solution. This injection is made in four directions (anterior, posterior and both sides) into the submucous tissue of the cervix and partly into the muscular layer. This procedure resulted in considerable infiltration and edema of the cervix. In the course of the injection, some of the fluid escaped through the eroded surface into the cervical canal, which was thus irrigated, but at least 2 or 3 cc. actually entered the submucous tissue and the muscular layer. In the course of the later injections, when the cervix became softer, the injection was considerably less difficult and from 5 to 6 cc. of the injection fluid remained in the cervix. The injections were repeated at five day intervals, and the total number varied between two and eight. The authors obtained favorable results with this treatment in sixty-three of sixty-six cases.

Monatsschrift für Kinderheilkunde, Berlin

65: 73-224 (March 4) 1936. Partial Index

Roentgenologic Demonstration of Calcified Mesenterial Lymph Nodes During Childhood. H. Bock.—p. 73.
Calcium Content in Normal and Rachitic Rats. H. Beumer.—p. 85.
*Leontiasis Ossea and Its Relation to Hereditary Syphilis. Irmgard Scharff.—p. 100.
Pulmonary Volumes of Healthy Children: Their Relation to Required Basal Metabolic Values. E. Püschel.—p. 105.
*Question of Mental Inferiority of First-Born. H. Luxenburger.—p. 109.
*Later Fate of Children with Convulsions. Eva Bergemann.—p. 116.

Leontiasis Ossea and Hereditary Syphilis.—Scharff reports the history of a girl, aged 11, in whom a hard swelling had appeared on the right superior maxilla at the age of 6. The swelling was painless but slowly increased in size. The question arose as to the type of the bone disease. Osteitis fibrosa (Recklinghausen), Paget's disease and Albers-Schönberg's marble bone disease could be excluded, but the symptomatology was like that of leontiasis ossea. The author restricts the latter term to a disease entity in which the bone disease is limited to the cranium (more especially to the superior maxilla), leaving the other parts of the skeleton free. Other characteristics are the hardness of the bone process, the onset during early childhood and the painless course. However, even after the disorder had been diagnosed as leontiasis ossea, there still remained the problem of etiology. In this connection the author points out that endocrine disturbances, erysipelas, infectious diseases, fetal defects and trauma could be excluded, but a concurrence with congenital syphilis seemed significant, because the literature reports a number of cases of leontiasis ossea in which the Wassermann reaction was positive and also some in which antisyphilitic treatment had a favorable effect. In the reported case, antisyphilitic treatment was instituted, but although it seemed to arrest further progress it did not produce a regression and, since the secondary symptoms (difficult nasal breathing) persisted, surgical removal was decided on. In view of the lack of another satisfactory explanation, the author thinks that in the reported case the leontiasis ossea suggests an etiologic relation with syphilis.

Question of Mental Inferiority of First-Born.—Luxenburger challenges the conclusion reached by Kleindienst as regards the higher incidence of mental defects in first-born children (abstracted in THE JOURNAL, February 8, p. 502). He concedes that to one not trained in statistics it may appear that thirty first-born in a total number of sixty-four mental defectives seems to indicate that mental defects are more frequent in the first-born than in the later births. However, he shows that, if the proper statistical procedure is employed, this is not the case; in fact, the number of first-born with mental defects is somewhat smaller than could have been expected; for if, as was the case in the investigated material, the average number of children per family was only 2.5, it is natural that the first-born would make up a comparatively large number. The author adds that his criticism of Kleindienst's conclusions does not apply to that author's observations regarding physical defects.

Later Fate of Children with Convulsions.—Bergemann reports the results of catamnestic studies on persons who, in the years from 1912 to 1930, had been under observation in the children's clinic on account of convulsions or of convulsion-like attacks. The total number of cases investigated was 155. The largest group, fifty-nine, were epileptic cases; other diagnoses were salaam convulsion, pyknolepsy, occasional convulsions (fever convulsions), convulsions of neuropathic origin, convulsions caused by organic brain lesions (birth trauma, hydrocephalus, encephalitis), jactatio capitis and so on. It was found that in epilepsy a definite prognosis is difficult, for neither the cases that took a favorable nor those that took an unfavorable course showed characteristic signs. However, the author classifies the epileptic patients in two groups: (1) those in whom the intelligence became impaired and in whom character changes appeared in the course of time (twenty-seven cases) and (2) those in whom such changes did not appear in spite of the continuous appearance of the attacks (thirty-two cases). The impairment of the intelligence became always manifest in the course of the observation, but character changes appeared in some cases from the beginning of the disorder. The well known unfavorable prognosis of salaam convulsions was corroborated by the author. In discussing pyknolepsy, she emphasizes that this term should be restricted to a definite symptomatology, of which she gives an outline. She also points out that this disorder is frequently favorably influenced by endocrine therapy and she suggests that by means of this therapy it might be possible to differentiate this condition from petit mal. The twenty cases of occasional convulsions proved the predisposition of early childhood for convulsions, for the after examinations revealed that all these patients were free from such attacks. In three other cases, however, the after-examination disclosed that the "occasional" attacks were really of an epileptic nature. The majority of the patients in whom the convulsions had been of a neuropathic origin had a neuropathic constitution but the convulsions had a tendency to disappear.

Problemy Tuberkuleza, Moscow

Pp. 1-148 (No. 1) 1936. Partial Index

Experimental Study of Immune-Infectious and Allergic Mechanisms in Tuberculosis. V. M. Berman.—p. 5.
Spread of Tuberculous Virus in Organism in Experimental Infection and Reinfection. V. M. Berman and E. K. Svishchevskaya.—p. 6.
Significance of Finding Tubercle Bacilli on Cardiac Valves in Rheumatic Endocarditis. P. I. Benevolenskiy, M. K. Dal and Z. I. Sosnovik.—p. 50.
*Roentgenologic Observations on Effect of Artificial Pneumothorax on Pulmonary Tuberculosis. N. F. Pershina.—p. 90.

Roentgenologic Observations on Effect of Artificial Pneumothorax on Pulmonary Tuberculosis.—According to Pershina, the extent of reparative processes in a collapsed lung is determined by the type and the age of the lesion and by the duration and completeness of the induced pneumothorax. It appears from the roentgenologic studies of the Leningrad Tuberculosis Research Institute that early infiltrating lesions with a tendency to breaking down require not less than four years to heal and bring about a permanent recovery. Patients presenting fibrous caseating lesions required from five to six years of pneumothorax therapy to obtain a permanent roentgenologic and clinical recovery. Interruption of the collapse therapy at an earlier period led to recurrences with cavity formation after three or four years, especially if the patient lived under unhealthful conditions. Recurrences were likewise observed in cases in which the pneumothorax was complicated by the formation of adhesions. Therefore they advise severance of the adhesions even for cases in which the cavities heal and the tubercle bacilli disappear from the sputum. Diminution of the pulmonary area and its aeration observed roentgenologically after a prolonged collapse therapy suggest that considerable anatomic changes take place within the pulmonary parenchyma. The effectiveness of the artificial pneumothorax therapy can be judged from the fact that fibrous caseating lesions may heal under its influence and even become calcified. Such results are only rarely observed in conservative treatment. Displacement of the heart and the mediastinum toward the collapsed lung need not necessarily be due to alterations in the pleura, as was formerly believed, but may be the result of cicatrizing alterations that existed in the lung previous to induction of pneumothorax or due to the effect of a prolonged compression of the pulmonary tissue.

Finska Läkaresällskapets Handlingar, Helsingfors

79: 99-194 (Feb.) 1936

Tumor-Producing Agent in Cell-Free Tumor Extract. A. Wallgren.—p. 109.
New Ophthalmodynamometer. J. G. Lindberg.—p. 124.
*Intrathoracic Neurinoma: Three Cases. L. Petersen Dyggve.—p. 133.
Do Seasonal Variations in Blood Picture Occur in Population of Finland? C. Hampf.—p. 141.

Intrathoracic Neurinoma.—Dyggve says that only about twenty cases of intrathoracic neurinoma have been reported. In his cases, all in women, diagnosis was made clinically and roentgenologically. The disorder is characterized by slow development, insignificant clinical symptoms, slight roentgenologic intensity, sharp, rounded contour, paravertebral location, size remarkable in proportion to the relative absence of symptoms, and possible occurrence of a dilated intervertebral foramen.

Hospitalstidende, Copenhagen

79: 113-140 (Feb. 4) 1936

Relation of Cholesterol in Organism Under Normal and Pathologic Conditions: Review. H. Dam.—p. 113.
*Monilethrix: Eleven Cases in Six Generations; Preliminary Report. U. Larsen.—p. 129.
Negative Result in Examination for Minerals in Sarcoid of Skin. K. A. Heiberg and C. J. Jacobson.—p. 136.

Monilethrix.—According to Larsen, the disorder in the family in question has been known for centuries. Of the eleven patients he has examined three: a girl aged 1½, her father, aged 38, and a paternal aunt aged 32, representing the three forms of development of the disturbance: (1) full development at birth, (2) development during the first half year of life and (3) later development (the last named mentioned only three times in the literature). The keratosis which in numerous cases accompanies monilethrix, especially in childhood, is a secondary phenomenon or has perhaps the same etiology as the monilethrix and in time disappears wholly or in part. Monilethrix is seen as a hereditary trophoneurosis probably of central origin.

79: 141-168 (Feb. 11) 1936

Influence of Hypertonic Solutions on Circulation: Dextrose-Osmosis Therapy. E. Polack and H. Harpøth.—p. 141.
Biology of Age and Endocrine Glands. H. Okkels.—p. 155.
*Xanthomatosis. V. Madsen.—p. 161.

Xanthomatosis.—Madsen says that he has found only six cases of xanthomatosis in the Danish medical literature (cases of Niemann-Pick's and Gaucher's disease excepted). One of these and his personal case, in a woman, aged 55, represent xanthomatosis localized in the skin, without jaundice; three cases, xanthomatosis localized in the skin, with jaundice, and two, Hand's disease. The prognosis in his instance seems less unfavorable than in the third group, but there may be xanthomatous processes in the endocardium, and the chronic liver changes which have existed for a considerable time are grave. Cholecystenterostomy would be justifiable if there are in the biliary or cystic duct partially obstructing processes that compromise the flow of the bile, but at present the risk is considered too great. Roentgen therapy has at most only checked a further propagation of the processes. Continuation of the treatment is intended. The breaking down of the tenth dorsal vertebra is ascribed to xanthomatous metastasis.

Ugeskrift for Læger, Copenhagen

98: 193-210 (March 5) 1936

*Hypersensitivity to Aminopyrine and Agranulocytosis. A. B. Hansen and C. Holten.—p. 193.

Hypersensitivity to Aminopyrine and Agranulocytosis.—Hansen and Holten report a case of hypersensitivity to aminopyrine with a granulopenic reaction in a woman, aged 25, with a history of two attacks believed to have been agranulocytosis. The patient had been given about 380 Gm. of aminopyrine in the course of fourteen months before the hypersensitivity became evident. The authors' attempts to determine whether patients suffering from various endocrine disorders react differently after the administration of small doses of aminopyrine than do patients with other disturbances, or on the whole abnormally, gave negative results.